1916

TOSHIBA

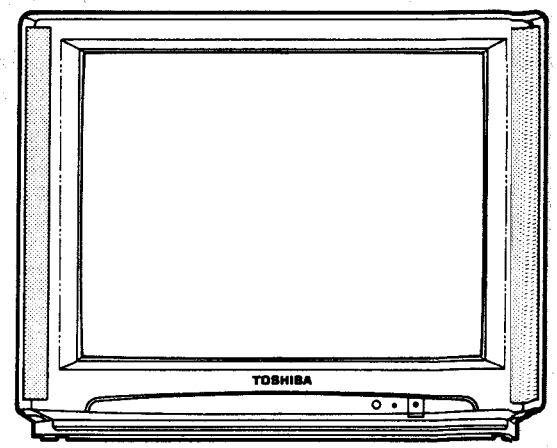
FILE NO. 030-9415

SERVICE MANUAL

COLOUR TELEVISION

C3SS Chassis

2836DF, 2536DF



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SAFETY INSTRUCTIONS

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" INSTRUCTIONS BELOW.

X-RAY RADIATION PRECAUTION

1. The E.H.T. must be checked every time the receiver is serviced to ensure that the C.R.T. does not emit X-ray radiation as result of excessive E.H.T. voltage. The nominal E.H.T. for this receiver is 26.5 kV at zero beam current (minimum brightness) operating at 220V a.c. The maximum E.H.T. voltage permissible in any operating circumstances must not exceed 29.0 kV. When checking the E.H.T., use the 'High Voltage Check' procedure in this manual using an accurate E.H.T. voltmeter.
2. The only source of X-RAY radiation in this receiver is the C.R.T. To prevent X-ray radiation, the replacement C.R.T. must be identical to the original fitted as specified in the Parts List.
3. Some components used in this receiver have safety related characteristics preventing the C.R.T. from emitting X-ray radiation.
   For continued safety, replacement component should only be made after referring the Product Safety Notice below.

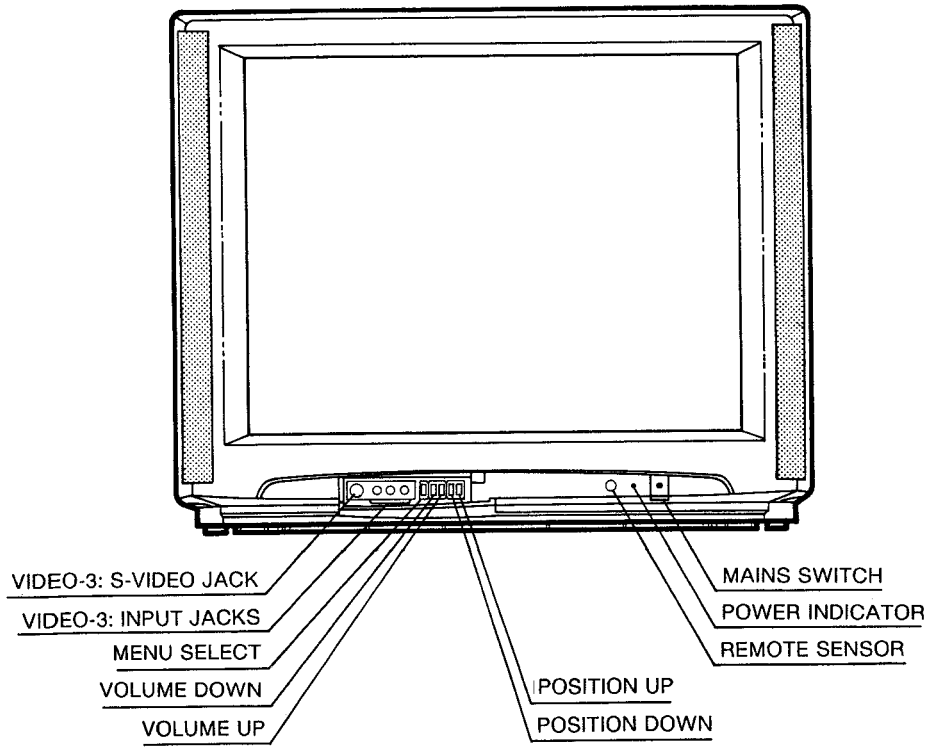
SAFETY PRECAUTION

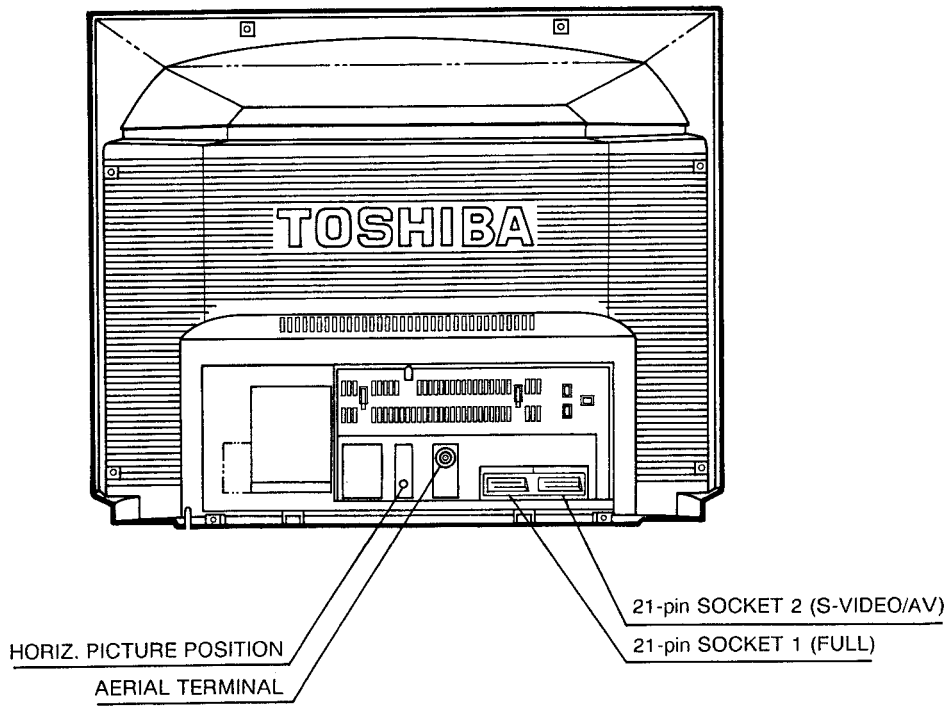
1. This receiver has a nominal working E.H.T. voltage of 24.5 kV. Extreme caution should be exercised when working on the receiver with the back removed.
   Do not attempt to service this receiver if you are not conversant with the precautions and procedures for working on high voltage equipment.
   When handling or working on the C.R.T., always discharge the anode to the receiver chassis before removing the anode cap
   The C.R.T., if broken, will violently expel glass fragments. Use shatter proof goggles and take extreme care while handling.
   Do not hold the C.R.T. by the neck as this is a very dangerous practice.
2. It is essential that to maintain the safety of the customer all cable forms be replaced exactly as supplied from factory.
3. A small part of the chassis used in this receiver is, when operating, at approximately half mains potential at all times. It is therefore essential in the interest of safety that when serving or connecting any test equipment the receiver should be supplied via a suitable isolating transformer of adequate rating.
4. Replace blown fuses within the receiver with the fuse specified in the parts list.
5. When replacing wires or components to terminals or tags, wind the leads around the terminal before soldering. When replacing safety components identified by the international hazard symbols on the circuit diagram and parts list, it must be a Toshiba approved type and must be mounted as the original.
6. Keep wires away from high temperature components.

PRODUCT SAFETY NOTICE

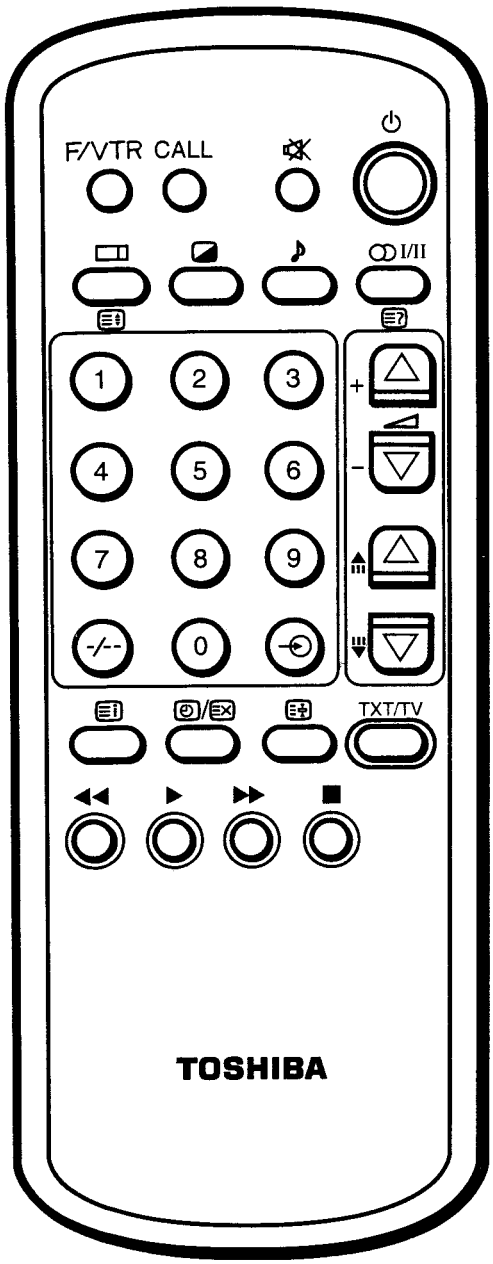
Many electrical and mechanical components in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the X-ray radiation protection afforded by them cannot necessarily be obtained by using replacements rated at higher voltages or wattage, etc. Components which have these special safety characteristics in this manual and its supplements are identified by the international hazard symbols on the schematic diagram and parts list. Before replacing any of these components read the parts list in this manual carefully. Substitute replacement components which do not have the same safety characteristics as specified in the parts list may create X-ray radiation.

FRONT CONTROLS AND REAR VIEWS





REMOTE HAND HELD UNIT



CT-9678

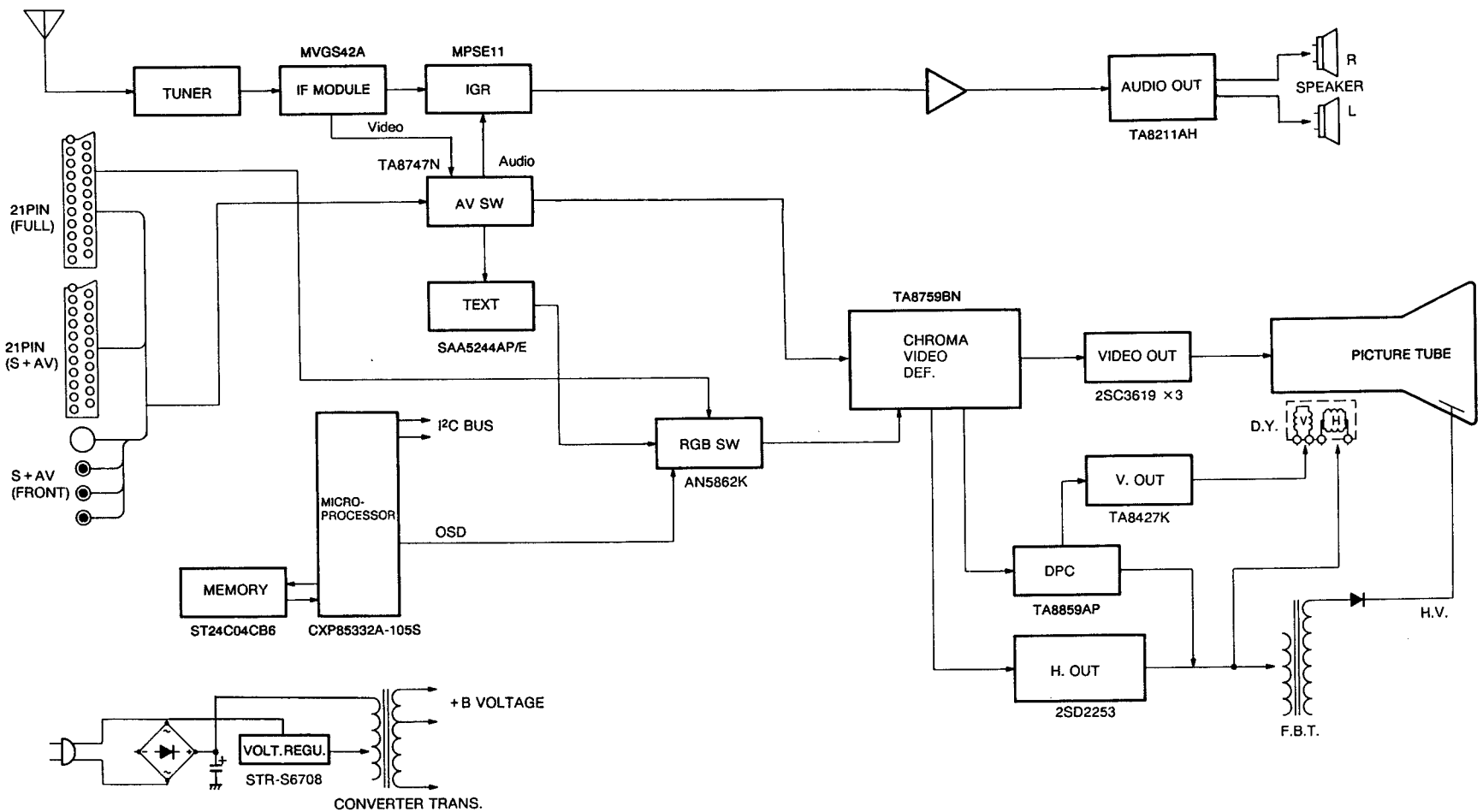
KEY ASSIGNMENT

- ⏻ ..... ON STAND-BY (F + ; VTR ON STAND-BY)
- 🔇 ..... MUTE
- CALL ..... DISPLAY CALL
- F/VTR ..... FUNCTION KEY FOR VTR (To push double for VTR & SERVICE Operation)
- ..... <TV MODE> ..... TUNING & OTHER MENU <TEXT MODE> ..... F-T-B (FULL, TOP, BOTTOM)
- ..... PICTURE MENU
- ♪ ..... SOUND MENU
- I/II ..... <TV MODE> ..... STEREO BILINGUAL <TEXT MODE> ..... REVEAL / CONCEAL
- 1~9, 0 ... TEN KEYS
- - / - - ..... 1 or 2 place
- ..... VIDEO INPUT (EXTERNAL INPUT SOURCE SW.)
- ..... VOLUME
- + ... LEVEL PLUS (VOLUME, MENU)
- − ..... LEVEL MINUS (VOLUME, MENU)
- △, ... UP (POSI., CH., TEXT PAGE)
- ▽, ... DOWN (POSI., CH., TEXT PAGE)

TELE-TEXT
- TXT/TV..... TEXT, MIX, TV MODE SW.
- ..... HOLD
- ..... TIME DISPLAY (TV MODE) TEXT CLEAR (TEXT MODE)
- ..... INDEX
- FLOF COLOUR KEY (4 key used)
  - ○ ; Red ○ ; Green
  - ○ ; Yellow ○ ; Cyan

VTR
- To push with F/VTR Key
- ⏻ ..... ON STAND-BY ■ ..... STOP
- ▶ ..... PLAY
- ◀◀ ..... FF / CUE ▶▶ ..... REV / REW

CIRCUIT BLOCK DIAGRAM



WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

INSTALLATION AND SERVICE ADJUSTMENTS

GENERAL INFORMATIONS

All adjustments are thoroughly checked and corrected when the receiver leaves the factory. Therefore the receiver should operate normally and produce proper colour and B/W pictures upon installation. However, several minor adjustments may be required depending on the particular location in which the receiver is operated.
This receiver is shipped completely in cardboard carton. Carefully draw out the receiver from the carton and remove all packing materials. Plug the power cord into a convenient 220 volts 50 Hz AC two pin power outlet. Turn the receiver ON. Check and adjust all the customer controls such as BRIGHTNESS, CONTRAST and COLOUR Controls to obtain natural colour or B/W picture.

AUTOMATIC DEGAUSSING

A degaussing coil is mounted around the picture tube so that external degaussing after moving the receiver is normally unnecessary, providing the receiver is properly degaussed upon installation. The degaussing coil operates for about 1 second after the power to the receiver is switched ON. If the set is moved or faced in a different direction, the power switch must be switched off at least 30 minutes in order that the automatic degaussing circuit operates properly. Should the chassis or parts of the cabinet become magnetized to cause poor colour purity, use an external degaussing coil. Slowly move the degaussing coil around the faceplate of the picture tube, the sides and front of the receiver and slowly withdraw the coil to a distance of about 2 m before disconnecting it from AC source. If colour shading still persists, perform the COLOUR PURITY ADJUSTMENT and CONVERGENCE ADJUSTMENTS procedures.

HIGH VOLTAGE CHECK

CAUTION: There is no HIGH VOLTAGE ADJUSTMENT on this chassis.

1. Connect an accurate high voltage meter to the second anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST Controls to minimum (zero beam current).
3. High voltage will be measured below 29.0 kV.

HORIZONTAL CENTRE ADJUSTMENT

1. Receive the UK PHILIPS pattern.
2. Set the contrast and colour to centre, and the brightness to centre.
3. Adjust H. CENTER USER Control (R452) so the pattern centre can be located at the screen centre.

FOCUS ADJUSTMENT

Adjust FOCUS Control on FLYBACK TRANS. (T461) for well defined scanning lines in the centre area on the screen.

PAL MATRIX ADJUSTMENT

1. Tune in the colour programme of the Philips pattern.
2. Set the COLOUR Control to obtain the proper colour.
3. If the PAL MATRIX adjustment is incorrect, the Venetian Blind would appear in the colour bars area. This case needs the adjustment.
4. At the first, adjust DL PHASE ADJ. Coil (L551) to minimize the Venetian Blind.
5. Next adjust 1H-DL ADJ. VR (R551) to minimize the Blind.
6. If the Venetian Blind still remains, adjust 1H-DL PHASE ADJ. Coil (L551) to minimize the Blind again.
7. Repeat the item 5 and 6 procedures, adjust the R551 and L551 until the Blind does not appear.

BELL COIL (LM01) ADJUSTMENT

1. Receive SECAM colour bar signal.
2. Connect the synchroscope to the terminal Pin 2 of LM01.
3. Adjust LM01 for the flat level of amplitude in each colour bar waveform on the scope. (See figure 1.)

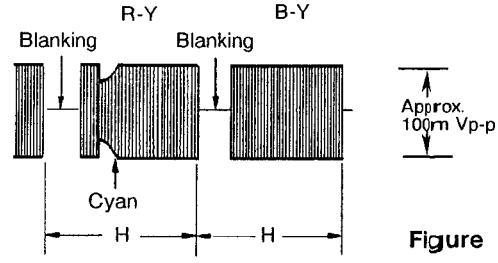


Figure 1.

IDENT COIL (LM04) ADJUSTMENT

1. Receive SECAM colour bar signal.
2. Connect the DC voltmeter (Digital Voltmeter) to the pin 23 of IC501.
3. Adjust LM04 for the maximum indication (approx. DC10V) on the meter.

Note: When peak is observed twice, take higher peak to set. Lower peak is wrong to show abnormal color phase.

B-Y, R-Y DEMOD COIL (LM02, LM03) ADJUSTMENT

1. Receive SECAM colour bar signal.
2. Set the COLOUR, BRIGHTNESS and CONTRAST Controls free.
3. Connect the synchroscope to the pin 62 of IC501.
4. Adjust LM02 so that the white level in picture part reaches to the vertical retrace line. (See figure 2.)
5. Then change the connection of synchroscope from the pin 62 to the pin 60 of IC501.
6. Adjust LM03 so that the white level in picture part reaches to the vertical retrace line. (See figure 3.)

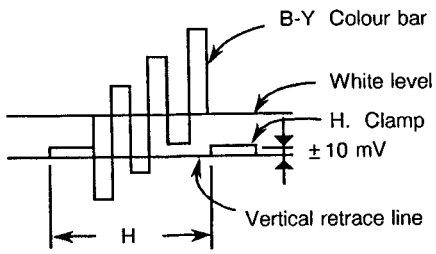


Figure 2.

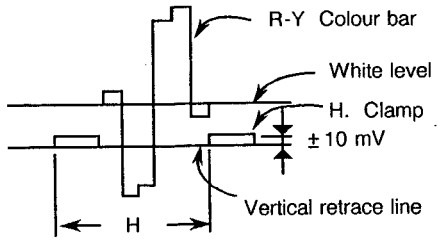


Figure 3.

CRT GREY SCALE ADJUSTMENT

1. Tune in an active channel.
2. Set the SERVICE SW. (S202) in the "H. LINE" position.
3. Turn the SCREEN Control (on T461) fully counter-clockwise.
4. By rotating the RED, GREEN and BLUE CUT OFF Controls (R557, R558, R559) to the mid position.
5. Set the GREEN and BLUE DRIVE Controls (R252, R253) to the center.
6. Rotate the SCREEN Control gradually clockwise until the first line appears slightly on the screen. Set the SCREEN Control to this position.
7. Adjust the CUT OFF Controls to obtain the slightly lighted horizontal lines in the same levels of three colours (RED, GREEN and BLUE). The lines may look like white if the CUT OFF Controls are adjusted properly.
8. Set the SERVICE SW. (S202) in the "RECEIVE" position.
9. Set the CONTRAST and COLOUR Controls to minimum, and BRIGHTNESS Control to the maximum.
10. Adjust the BLUE and GREEN DRIVE Controls (R252/R253) to obtain proper white-balanced picture in high light areas.
11. Set the BRIGHTNESS and CONTRAST Controls to obtain dark grey raster. Then check the white balance in low brightness. If the white balance is not proper, retouch the CUT OFF Controls and DRIVE Controls to obtain a good white balance in both low and high light areas.

SUB-BRIGHTNESS ADJUSTMENT

1. Tune in a colour programme.
2. Set the CONTRAST Control to the minimum and the BRIGHTNESS Control to the centre.
3. Set the COLOUR Control to the centre.
4. Set the SUB-BRIGHT. Control (R255) to the centre and leave the receiver for five minutes in this state.
5. Watching the picture well, adjust the SUB-BRIGHT. Control in the position where the picture does not show evidence of blooming in high bright area and not appear too dark in low bright portion.
6. Check the proper picture variation by rotating the CONTRAST and BRIGHTNESS Controls to both extremes.
7. If the picture does not appear dark with the CONTRAST and BRIGHTNESS Controls turned to the minimum, or not appear bright with the controls turned to the maximum, adjust the SUB-BRIGHT. Control again for the acceptable picture.

SERVICE ADJUSTMENT (BUS DATA CONTROL)

STEP	ADJUSTING PARTS	INPUT TERMINAL	OUTPUT TERMINAL	TEST SIGNAL	PROCEDURE (BUS DATA)
1	RF AGC	IF input (Pin (BA) of P102)	AGC terminal of tuner	IF 38.9 MHz CW 95 dBμF	1. Unsolder solder link of IF to open. 2. Set the TV to B/G mode. 3. Set the TV to SERVICE mode. *1 4. Connect DVM to terminal (BC) of P102. 5. Send BUS DATA (RFA) by remote control so that voltage at terminal (BC) can be 4V. *2
2	SECAM DET LEVEL	RF input	VIDEO output terminal BW of PIF Board	L-SECAM Modulation: 97% (at 94%) positive Input: 70 dBμV (F-6ch) (All white signal be included.)	1. Turn TV on. 2. Connect probe (10:1) of scope to VIDEO output terminal (BW). 3. Send BUS DATA (LVE) by remote control for the response of 2.0 Vp-p on scope. *3

*1 Set "SERVICE MODE" by RMT H.H.U. ((F) + ⊖ and (1), (0), (4), (8))

*2 Select the "RFA" symbol (F + ◪ (Item UP), F + ♪ (Item DN)) and adjust the level by LEVEL key of RMT H.H.U. and leave the TV for five minutes in this state.

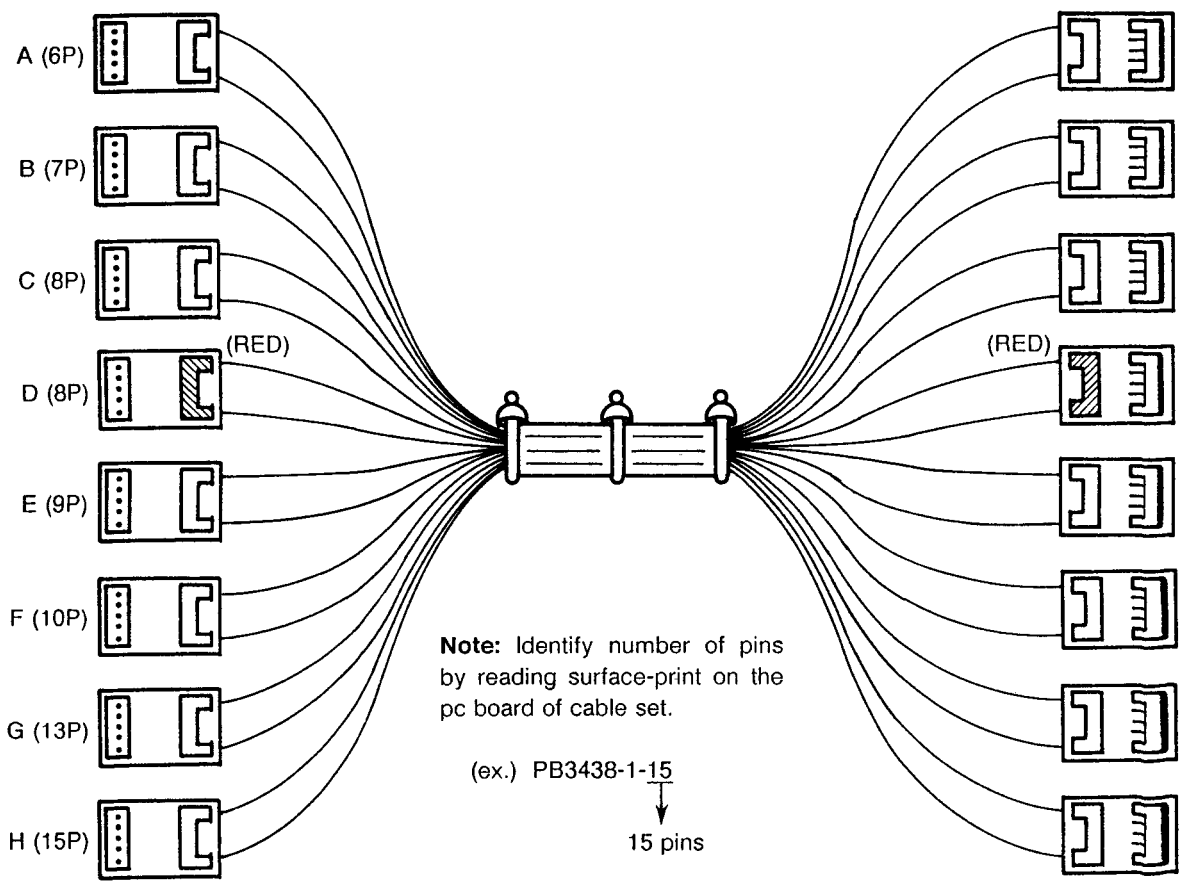
*3 Select the "LVE" symbol (F + ◪ (Item UP), F + ♪ (Item DN)) and adjust the level by LEVEL key of RMT H.H.U. and leave the TV for five minutes in this state.

EXTENSION CABLE SET

1. Extension Cable Set is available for servicing modules of C2DB chassis.
   For 2536DF/2836DF chassis, however, this cable is used only for SIF CONVERTER (10P) and CHROMA-1 (10P) modules.

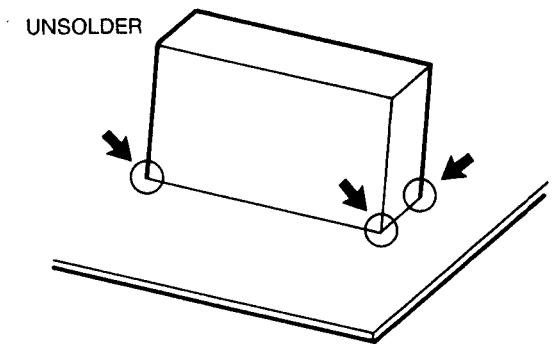
2. Identify number of pins by reading surface-print on the pc board of cable set.

Part No.	Description
23305270A	Extension Cable Set

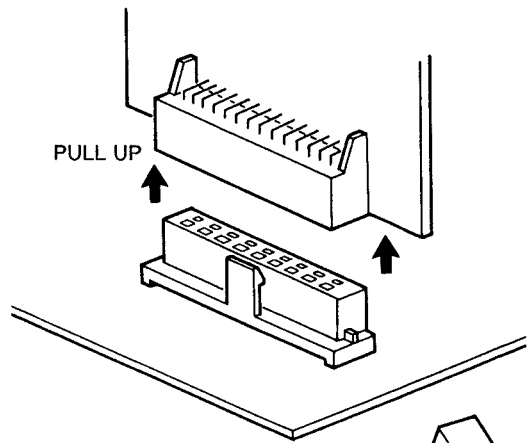


TO USE THE CABLE SET

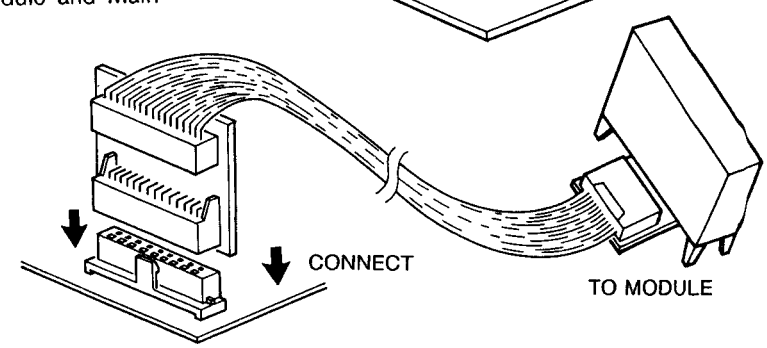
1. Unsolder corners on shielding case of module, which are marked with arrow in the figure.



2. Remove shielding case, and pull up module to disconnect.



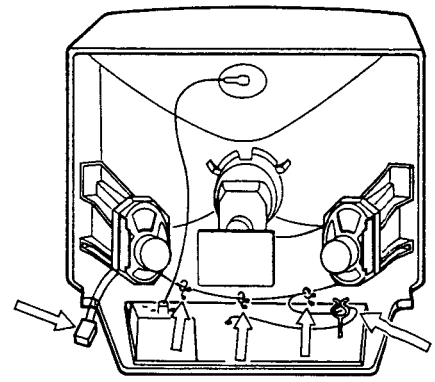
3. Connect Extension Cable Set to module and Main board.



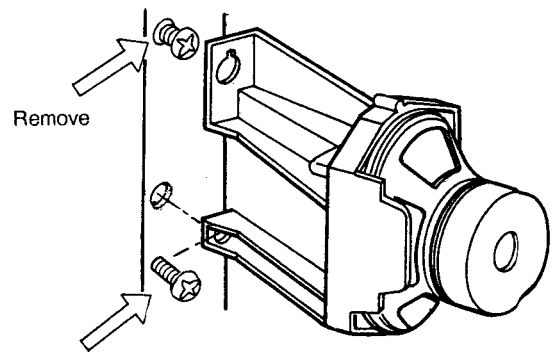
4. Reference chart of module and extension cable pin.

SETTING UP THE CHASSIS

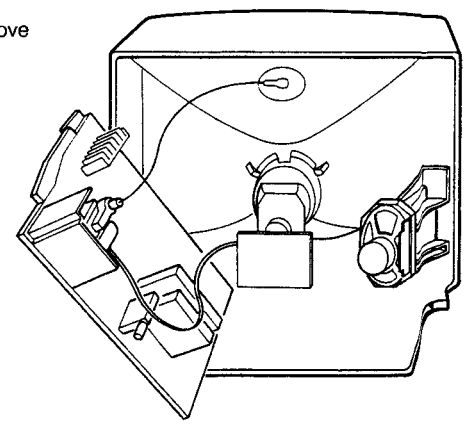
1. Remove the wire set for the loud speaker from the holder, and the degausser lead connector.



2. Remove the horn speaker unit (unscrew the fixing screws).

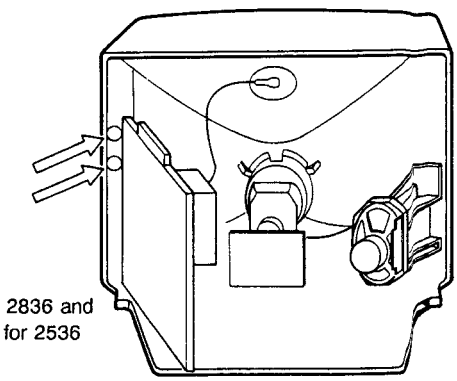


3. Lift up the chassis.



4. Using the screws which have been removed when disconnecting the front mask and the back cover, screw the chassis to the side of the front mask.

5. To restore, perform the above steps in opposite order.



Upper hole for 2836 and the lower hole for 2536 series.

ADJUSTMENT METHOD FOR SERVICING

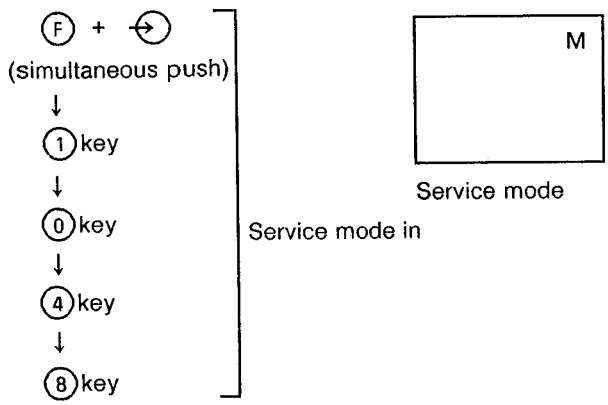
1. OUTLINE

Since each IC used is of I²C bus control type, readjustment of the TVs also needs adjustment through I²C bus control.

In the service mode, sub-bright, deflection system sub-adjustments, picture system sub-adjustments can be made easily with user remote control unit.

2. SERVICE MODE OPERATION

2-1. How to Enter the Service Mode



2-2. How to Exit from the Service Mode

Exit the service mode by turning the power on/off with the remote control.

3. ADJUSTMENT IN THE SERVICE MODE

3-1. Service Mode Level Adjustments

(1) Push (F) + ◩ key (simultaneous push) (item UP) or (F) + ♪ key (simultaneous push) (item DN) to select item to be adjusted.

(2) Adjust with the level UP/DN (VOL UP/DN key) key.

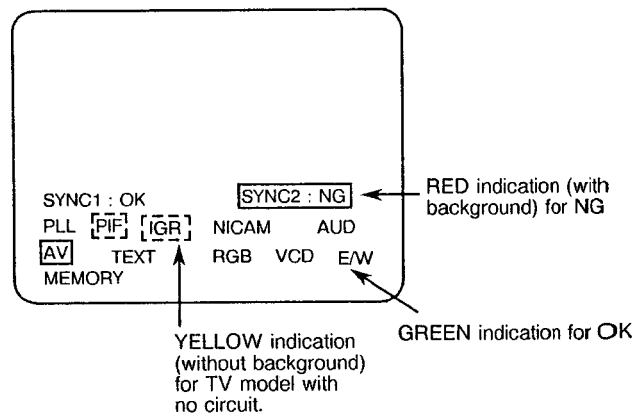
3-2. Other Service Mode Adjustments

(F) + (2) key (simultaneous push) cut off:
(NO VERTICAL DEFLECTION) ON/OFF

4. SELF CHECK

(1) Indicates sync signal and acknowledgement of each IC.

(2) Example of display on screen


SYNC1 : OK
SYNC2 : NG
RED indication (with background) for NG
PLL PIF IGR NICAM AUD
AV TEXT RGB VCD E/W
MEMORY
YELLOW indication (without background) for TV model with no circuit.
GREEN indication for OK

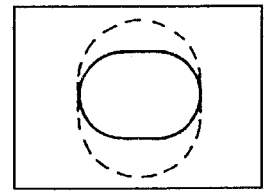
(3) Operation:

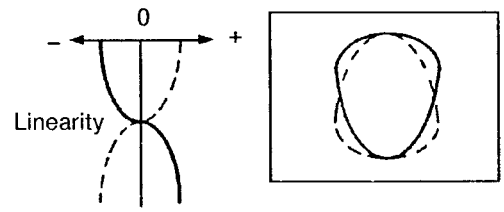
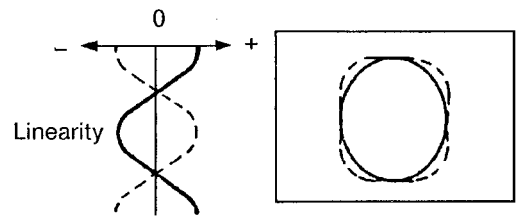
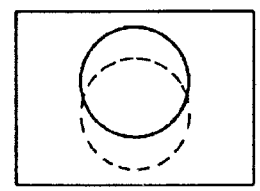
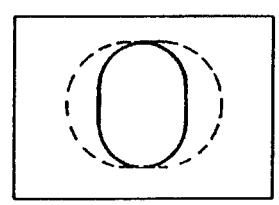
① TV gets into service mode with key operation;

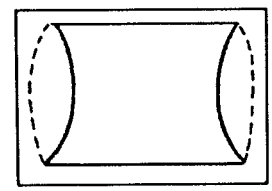
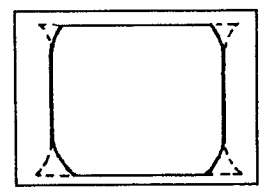
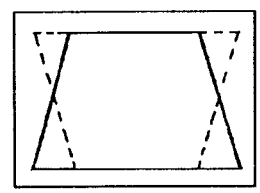
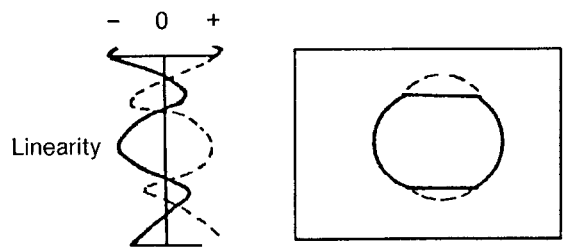
(F) + (→) → (1)key → (0)key → (4)key → (8)key

② TV indicates screen with (F) + (4)key.

5. SUB DATA ADDITIONAL DESCRIPTION

ITEM No.	Symbol	Description
15	LVE	L-SECAM output level.
16	RFA	RF AGC
17	HIT	V amplitude adjustment. 

ITEM No.	Symbol	Description
18	LIN	V linearity correction 1.  Linearity balance between top and bottom screen.
19	VSC	V linearity correction 2.  Linearity balance between top/bottom and center.
20	VPC	V picture position adjustment. 
21	VCP	Setting of amount of V amplitude correction against variation of screen brightness.
22	WID	H amplitude adjustment. 

ITEM No.	Symbol	Description
23	DPC	H pin-cushion distortion correction. 
24	CNR	H pin-cushion distortion correction at four corners. 
25	KEY	Pedestal distortion correction. 
26	HCP	Setting of amount of H amplitude correction against variation of screen brightness.
27	VMC	V linearity correction. Linearity balance at 1/4, 3/4 areas from top. 

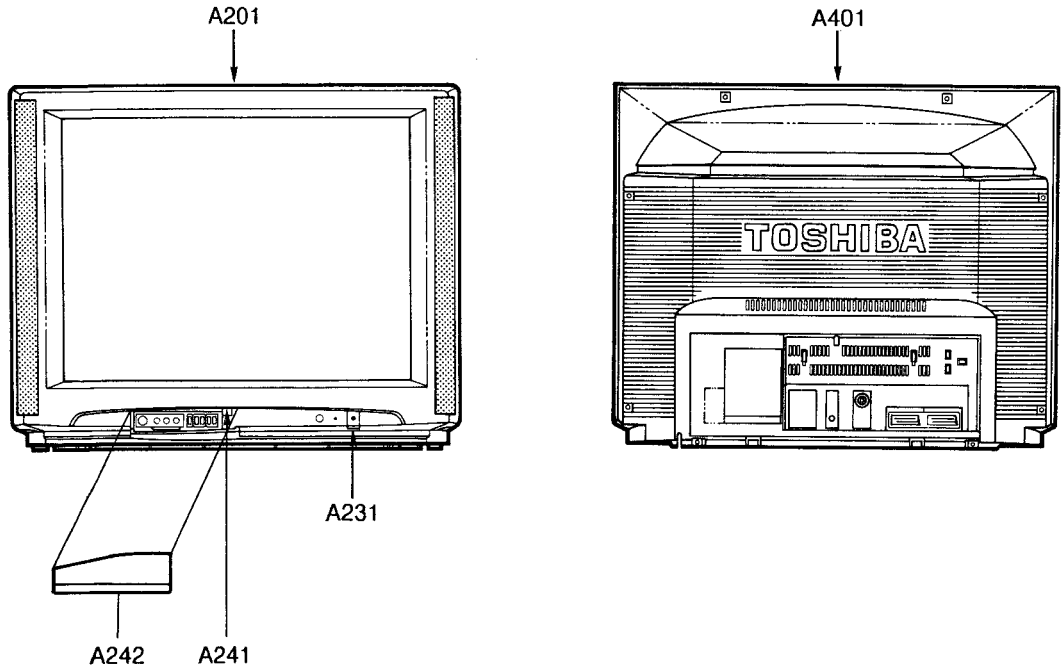
6. ROM DATA LIST FOR IIC BUS CONTROL

(Reference Value)

ITEM No.	Symbol	Comment	Data (Philips tube)
11	M00	MODE 0	42
12	M01	MODE 1	18
13	M02	MODE 2	01
14	M03	MODE 3	43
15	LVE	L-SECAM OUTPUT LEVEL	* 25
16	RFA	RF AGC	* 42
17	HIT	HEIGHT	* 30
18	LIN	V. LINEARITY	32
19	VSC	V. S-CORRECTION	32
20	VPC	V. POSITION	* 07
21	VCP	V. COMPENSATION	30
22	WID	H. WIDTH	* 22
23	DPC	PARABOLA	* 26
24	CNR	DPC CORNER	32 (44)
25	KEY	KEYSTONE	* 09
26	HCP	H. COMPENSATION	10
27	VMC	V. M-CORRECTION	52
28	SHI	16:9 SUB HEIGHT	00
29	SLI	16:9 SUB V. LINEARITY	32
30	SVS	16:9 SUB V. S-CORRECTION	17
31	SDP	16:9 SUB DPC	21 (18)
32	SCN	16:9 SUB CORNER	30
33	TON	BAZOOKA TONE MID-LEVEL	—
34	NON	NICAM ON LEVEL	05
35	NOF	NICAM OFF LEVEL	16
36	ION	IGR ON LEVEL	16
37	IOF	IGR OFF LEVEL	08
38	I24	IGR K24	111
39	I39	IGR K39	12
40	N39	NICAM K39	13
41	I49	IGR K14, K19	32
42	K23	INPUT LEVEL K23	127

* Mark items should be adjusted.

CABINET REPLACEMENT PARTS LIST



Location No.	Part No.	Description
A201	23410460	Front Cover (2836DF)
A201	23519148	Front Cover (2536DF)
A220	23416835	Speaker Box, Right
A221	23448955	Piece
A225	23416834	Speaker Box, Left
A226	23448955	Piece
A231	23443776	Button, POWER (2836DF)
A231	23443775	Button, POWER (2536DF)
A241	70368125	Push Catch for Door
A242	23425524	Door (2836DF)
A242	23425536	Door (2536DF)
⚠A401	23425487	Back Cover (2836DF)
⚠A401	23425494	Back Cover (2536DF)
A411	23569220	Label, Model No., B/C (2836DF)
A411	23569238	Label, Model No., B/C (2536DF)

CHASSIS REPLACEMENT PARTS LIST

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

CAUTION: The international hazard symbols " ⚠ " in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2. Do not degrade the safety of the receiver through improper servicing.

NOTICE: The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.

ABBREVIATIONS:

Capacitors.....	CD	: Ceramic Disk	PF	: Plastic Film	EL	: Electrolytic
Resistors.....	CF	: Carbon Film	CC	: Carbon Composition	MF	: Metal Film
	OMF	: Oxide Metal Film	VR	: Variable Resistor	FR	: Fusible Resistor

(All CD and PF capacitors are ±5%, 50V and all resistors, ±5%, 1/6W unless otherwise noted.)

Location No.	Part No.	Description
CAPACITORS		
C151	24794470	EL, 47μF, ±20%, 16V
C152	24538474	PF, 0.47μF
C153	24794101	EL, 100μF, ±20%, 16V
C154	24436470	CD, 47pF
C155	24436470	CD, 47pF
C156	24232103	CD, 0.01μF, +80%, -20%
C157	24232103	CD, 0.01μF, +80%, -20%
C158	24590222	PF, 2200pF
C159	24212102	CD, 1000pF, ±10%
C160	24085981	EL, 10μF, ±20%, 16V, Non-Polar
C182	24232103	CD, 0.01μF, +80%, -20%
C185	24232103	CD, 0.01μF, +80%, -20%
C186	24590474	PF, 0.47μF
C188	24797100	EL, 10μF, ±20%, 50V
C189	24232103	CD, 0.01μF, +80%, -20%
C190	24232103	CD, 0.01μF, +80%, -20%
C193	24797100	EL, 10μF, ±20%, 50V
C194	24797479	EL, 4.7μF, ±20%, 50V
C195	24794471	EL, 470μF, ±20%, 16V
C197	24797479	EL, 4.7μF, ±20%, 50V
C198	24797479	EL, 4.7μF, ±20%, 50V
C202	24795101	EL, 100μF, ±20%, 25V
C203	24232103	CD, 0.01μF, +80%, -20%
C204	24797220	EL, 22μF, ±20%, 50V
C205	24797478	EL, 0.47μF, ±20%, 50V
C206	24232103	CD, 0.01μF, +80%, -20%
C207	24794100	EL, 10μF, ±20%, 16V
C208	24232103	CD, 0.01μF, +80%, -20%
C209	24232103	CD, 0.01μF, +80%, -20%
C210	24797100	EL, 10μF, ±20%, 50V
C211	24232103	CD, 0.01μF, +80%, -20%
C212	24232103	CD, 0.01μF, +80%, -20%
C213	24232103	CD, 0.01μF, +80%, -20%
C214	24436330	CD, 33pF (2836DF)
C214	24436220	CD, 22pF (2536DF)
C215	24436560	CD, 56pF (2836DF)
C215	24436470	CD, 47pF (2536DF)
C240	24538474	PF, 0.47μF

Location No.	Part No.	Description
C301	24085944	EL, 2.2μF, ±20%, 50V, Non-Poar
C302	24212152	CD, 1500pF, ±10%
C303	24214221	CD, 220pF, ±10%, 500V
C304	24590102	PF, 1000pF
C305	24617912	EL, 2.2μF, ±10%, 50V (2836DF)
C305	24617915	EL, 1μF, ±10%, 50V (2536DF)
C306	24667332	EL, 3300μF, ±20%, 25V (2836DF)
C306	24667472	EL, 4700μF, ±20%, 25V (2536DF)
C307	24232103	CD, 0.01μF, +80%, -20%
C308	24693473	PF, 0.047μF, 100V
C310	24765102	EL, 1000μF, ±20%, 35V
C311	24214151	CD, 150pF, ±10%, 500V
C313	24082057	PF, 0.22μF, 100V
C314	24591563	PF, 0.056μF
C315	24590104	PF, 0.1μF
C316	24538474	PF, 0.47μF
C317	24617926	EL, 220μF, ±20%, 16V
C318	24668221	EL, 220μF, ±20%, 35V
C319	24212102	CD, 1000pF, ±10%
C321	24591183	PF, 0.018μF
C322	24617912	EL, 2.2μF, ±10%, 50V
C323	24538224	PF, 0.22μF
C324	24590683	PF, 0.068μF
C325	24232103	CD, 0.01μF, +80%, -20%
C326	24538474	PF, 0.47μF
C378	24590104	PF, 0.1μF
C401	24617920	EL, 120μF, ±20%, 25V
C402	24353241	CD, 240pF
C403	24797339	EL, 3.3μF, ±20%, 50V
C405	24590183	PF, 0.018μF
C406	24590183	PF, 0.018μF
C407	24590273	PF, 0.027μF
C408	24794221	EL, 220μF, ±20%, 16V
C409	24232103	CD, 0.01μF, +80%, -20%
C410	24082261	PF, 5600pF, 100V
C411	24435330	CD, 33pF, 500V

Location No.	Part No.	Description
C412	24590182	PF, 1800pF
C413	24214391	CD, 390pF, ±10%, 500V
C414	24212471	CD, 470pF, ±10%
C416	24709100	EL, 10μF, ±20%, 200V
C417	24214821	CD, 820pF, ±10%, 500V
C421	24095755	PF, 0.47μF, 200V
C422	24829473	PF, 0.047μF, 400V
⚠C423	24095755	PF, 0.47μF, 200V
C430	24538474	PF, 0.47μF
⚠C440	24082349	PF, 7000pF, ±3%, 1500V
C441	24214221	CD, 220pF, ±10%, 500V
C443	24214221	CD, 220pF, ±10%, 500V
C444	24082287	PF, 5100pF, ±3%, 1800V
C445	24095903	PF, 0.056μF, ±10%, 250V
C446	24095887	PF, 0.01μF, ±3%, 630V
C447	24700479	EL, 4.7μF, ±20%, 250V
C448	24640962	EL, 33μF, ±20%, 200V
C449	24667102	EL, 1000μF, ±20%, 25V
C450	24794471	EL, 470μF, ±20%, 16V
⚠C463	24212222	CD, 2200pF, ±10%
C464	24082727	PF, 1.5μF, 200V
C466	24095751	PF, 0.33μF, 200V
C470	24794220	EL, 22μF, ±20%, 16V
C471	24538474	PF, 0.47μF
C501	24794331	EL, 330μF, ±20%, 16V
C502	24474181	CD, 180pF, ±10%
C503	24436181	CD, 180pF
C504	24353150	CD, 15pF
C505	24590273	PF, 0.027μF
C507	24590103	PF, 0.01μF
C508	24085944	EL, 2.2μF, ±20%, 50V, Non-Poar
C509	24353330	CD, 33pF
C510	24232103	CD, 0.01μF, +80%, −20%
C511	24232103	CD, 0.01μF, +80%, −20%
C512	24353200	CD, 20pF
C513	24232103	CD, 0.01μF, +80%, −20%
C515	24797220	EL, 22μF, ±20%, 50V
C516	24590104	PF, 0.1μF
C517	24590104	PF, 0.1μF
C518	24232103	CD, 0.01μF, +80%, −20%
C520	24797478	EL, 0.47μF, ±20%, 50V
C521	24206478	EL, 0.47μF, 50V
C522	24206478	EL, 0.47μF, 50V
C523	24206478	EL, 0.47μF, 50V
C524	24797100	EL, 10μF, ±20%, 50V
C525	24436820	CD, 82pF
C526	24436820	CD, 82pF
C527	24436820	CD, 82pF
C529	24353300	CD, 30pF
C531	24794100	EL, 10μF, ±20%, 16V
C532	24436391	CD, 390pF (2836DF)
C533	24436121	CD, 120pF (2836DF)
C534	24436101	CD, 100pF (2836DF)
C535	24797100	EL, 10μF, ±20%, 50V
C536	24797478	EL, 0.47μF, ±20%, 50V
C537	24794471	EL, 470μF, ±20%, 16V
C540	24436221	CD, 220pF (2836DF)
C540	24436331	CD, 330pF (2536DF)
C541	24436221	CD, 220pF (2836DF)
C541	24436331	CD, 330pF (2536DF)
C542	24436221	CD, 220pF (2836DF)
C542	24436301	CD, 300pF (2536DF)
C626	24797470	EL, 47μF, ±20%, 50V

Location No.	Part No.	Description
C627	24590104	PF, 0.1μF
C631	24232103	CD, 0.01μF, +80%, −20%
C632	24590473	PF, 0.047μF
C633	24538124	PF, 0.12μF
C634	24538124	PF, 0.12μF
C635	24590822	PF, 8200pF
C636	24797229	EL, 2.2μF, ±20%, 50V
C637	24667470	EL, 47μF, ±20%, 25V
C638	24667470	EL, 47μF, ±20%, 25V
C639	24796101	EL, 100μF, ±20%, 35V
C640	24590822	PF, 8200pF
C641	24795470	EL, 47μF, ±20%, 25V
C642	24797229	EL, 2.2μF, ±20%, 50V
C643	24797478	EL, 0.47μF, ±20%, 50V
C644	24667102	EL, 1000μF, ±20%, 25V
C646	24667102	EL, 1000μF, ±20%, 25V
C660	24797478	EL, 0.47μF, ±20%, 50V
C661	24794100	EL, 10μF, ±20%, 16V
C665	24590104	PF, 0.1μF
C666	24590473	PF, 0.047μF
C668	24793221	EL, 220μF, ±20%, 10V
C669	24797100	EL, 10μF, ±20%, 50V
C670	24797339	EL, 3.3μF, ±20%, 50V
C671	24797339	EL, 3.3μF, ±20%, 50V
C674	24590562	PF, 5600pF
C677	24590562	PF, 5600pF
C681	24794102	EL, 1000μF, ±20%, 16V
⚠C801	24082318	PF, 0.1μF, ±20%, AC250V
⚠C802	24094656	CD, 2200pF, ±20%, AC400V
⚠C803	24094656	CD, 2200pF, ±20%, AC400V
⚠C804	24082318	PF, 0.1μF, ±20%, AC250V
C807	24092281	CD, 4700pF, ±20%, AC250V
C808	24092281	CD, 4700pF, ±20%, AC250V
C809	24086037	EL, 270μF, ±20%, 400V
C810	24667331	EL, 330μF, ±20%, 25V
C811	24214471	CD, 470pF, ±10%, 500V
C812	24676220	EL, 22μF, ±20%, 100V
C813	24590222	PF, 2200pF
C814	24214471	CD, 470pF, ±10%, 500V
C815	24095931	PF, 2200pF, 1250V
C816	24795470	EL, 47μF, ±20%, 25V
C817	24092341	CD, 470pF, ±10%, 2kV
C818	24214471	CD, 470pF, ±10%, 500V
C819	24797470	EL, 47μF, ±20%, 50V
C820	24794470	EL, 47μF, ±20%, 16V
C827	24794471	EL, 470μF, ±20%, 16V
C828	24212101	CD, 100pF, ±10%
C829	24796222	EL, 2200μF, ±20%, 35V
C830	24092337	CD, 220pF, ±10%, 2kV
C831	24086953	EL, 220μF, ±20%, 160V
C833	24797100	EL, 10μF, ±20%, 50V
C835	24797479	EL, 4.7μF, ±20%, 50V
C836	24797100	EL, 10μF, ±20%, 50V
C837	24797100	EL, 10μF, ±20%, 50V
C840	24214471	CD, 470pF, ±10%, 500V
C846	24590104	PF, 0.1μF
C849	24214471	CD, 470pF, ±10%, 500V
C901	24700100	EL, 10μF, ±20%, 250V
C902	24095923	PF, 4700pF, 1250V
CA01	24474101	CD, 100pF, ±10%
CA02	24474101	CD, 100pF, ±10%
CA03	24474101	CD, 100pF, ±10%
CA10	24212102	CD, 1000pF, ±10%
CA11	24212102	CD, 1000pF, ±10%

Location No.	Part No.	Description
CA12	24794102	EL, 1000μF, ±20%, 16V
CA13	24794100	EL, 10μF, ±20%, 16V
CA15	24590104	PF, 0.1μF
CA16	24797100	EL, 10μF, ±20%, 50V
CA21	24232103	CD, 0.01μF, +80%, -20%
CA22	24797010	EL, 1μF, ±20%, 50V
CA29	24232103	CD, 0.01μF, +80%, -20%
CA31	24473300	CD, 30pF
CA32	24473300	CD, 30pF
CA33	24212102	CD, 1000pF, ±10%
CA36	24590104	PF, 0.1μF
CA90	24538474	PF, 0.47μF
CA91	24212102	CD, 1000pF, ±10%
CA92	24590104	PF, 0.1μF
CB01	24474101	CD, 100pF, ±10%
CB09	24794330	EL, 33μF, ±20%, 16V
CB10	24797010	EL, 1μF, ±20%, 50V
CB11	24436181	CD, 180pF
CB12	24212561	CD, 560pF, ±10%
CB13	24212472	CD, 4700pF, ±10%
CD01	24796220	EL, 22μF, ±20%, 35V
CD11	24676339	EL, 3.3μF, ±20%, 100V
CF02	24797100	EL, 10μF, ±20%, 50V
CF03	24232103	CD, 0.01μF, +80%, -20%
CF05	24212102	CD, 1000pF, ±10%
CF06	24353150	CD, 15pF
CF07	24232103	CD, 0.01μF, +80%, -20%
CF08	24590104	PF, 0.1μF
CF09	24085944	EL, 2.2μF, ±20%, 50V, Non-Poar
CF10	24794330	EL, 33μF, ±20%, 16V
CF11	24232103	CD, 0.01μF, +80%, -20%
CF16	24353080	CD, 8pF, ±0.25pF
CF17	24797100	EL, 10μF, ±20%, 50V
CF18	24590104	PF, 0.1μF
CF19	24794101	EL, 100μF, ±20%, 16V
CF20	24473220	CD, 22pF
CM01	24436221	CD, 220pF
CM02	24436221	CD, 220pF
CM03	24340180	CD, 18pF
CM04	24340180	CD, 18pF
CM05	24232103	CD, 0.01μF, +80%, -20%
CM06	24357270	CD, 27pF
CM07	24590563	PF, 0.056μF
CM08	24232103	CD, 0.01μF, +80%, -20%
CM09	24232103	CD, 0.01μF, +80%, -20%
CM10	24473270	CD, 27pF
CM12	24590104	PF, 0.1μF
CN01	24436270	CD, 27pF
CN02	24436270	CD, 27pF
CN03	24436101	CD, 100pF
CN04	24436101	CD, 100pF
CN06	24232103	CD, 0.01μF, +80%, -20%
CN11	24232103	CD, 0.01μF, +80%, -20%
CN12	24436271	CD, 270pF
CN13	24436820	CD, 82pF
CN14	24212102	CD, 1000pF, ±10%
CN16	24590273	PF, 0.027μF
CN17	24232103	CD, 0.01μF, +80%, -20%
CV01	24797100	EL, 10μF, ±20%, 50V
CV02	24206010	EL, 1μF, 50V
CV03	24797100	EL, 10μF, ±20%, 50V
CV04	24206010	EL, 1μF, 50V
CV05	24232103	CD, 0.01μF, +80%, -20%

Location No.	Part No.	Description
CV06	24797100	EL, 10μF, ±20%, 50V
CV07	24797010	EL, 1μF, ±20%, 50V
CV08	24797010	EL, 1μF, ±20%, 50V
CV09	24232103	CD, 0.01μF, +80%, -20%
CV10	24797100	EL, 10μF, ±20%, 50V
CV11	24797100	EL, 10μF, ±20%, 50V
CV12	24797100	EL, 10μF, ±20%, 50V
CV14	24232103	CD, 0.01μF, +80%, -20%
CV15	24797100	EL, 10μF, ±20%, 50V
CV16	24797100	EL, 10μF, ±20%, 50V
CV17	24797100	EL, 10μF, ±20%, 50V
CV18	24797220	EL, 22μF, ±20%, 50V
CV19	24232103	CD, 0.01μF, +80%, -20%
CV20	24212271	CD, 270pF, ±10%
CV21	24212271	CD, 270pF, ±10%
CV23	24793471	EL, 470μF, ±20%, 10V
CV24	24212271	CD, 270pF, ±10%
CV25	24212271	CD, 270pF, ±10%
CV26	24212271	CD, 270pF, ±10%
CV27	24212271	CD, 270pF, ±10%
CV31	24793471	EL, 470μF, ±20%, 10V
CV32	24797101	EL, 100μF, ±20%, 50V
CV34	24797100	EL, 10μF, ±20%, 50V
CV36	24797100	EL, 10μF, ±20%, 50V
CV41	24232103	CD, 0.01μF, +80%, -20%
CV46	24794331	EL, 330μF, ±20%, 16V
CV72	24794100	EL, 10μF, ±20%, 16V
CV73	24794100	EL, 10μF, ±20%, 16V
CW01	24797100	EL, 10μF, ±20%, 50V
CW02	24232103	CD, 0.01μF, +80%, -20%
CW05	24232103	CD, 0.01μF, +80%, -20%
CX02	24797478	EL, 0.47μF, ±20%, 50V
CX03	24797478	EL, 0.47μF, ±20%, 50V
CX04	24797478	EL, 0.47μF, ±20%, 50V
CX05	24206010	EL, 1μF, 50V
CX06	24206010	EL, 1μF, 50V
CX07	24206010	EL, 1μF, 50V
CX08	24797100	EL, 10μF, ±20%, 50V
CX09	24797010	EL, 1μF, ±20%, 50V
CX10	24797010	EL, 1μF, ±20%, 50V
CX11	24797010	EL, 1μF, ±20%, 50V

RESISTORS

R151	24366471	CF, 470 ohm
R152	24366103	CF, 10k ohm
R153	24366152	CF, 1500 ohm
R154	24366122	CF, 1200 ohm
R155	24366151	CF, 150 ohm
R156	24366101	CF, 100 ohm
R157	24366102	CF, 1k ohm
R158	24366103	CF, 10k ohm
R159	24366473	CF, 47k ohm
R160	24366101	CF, 100 ohm
R161	24366474	CF, 470k ohm
R162	24366224	CF, 220k ohm
R163	24366222	CF, 2200 ohm
R164	24366103	CF, 10k ohm
R165	24366152	CF, 1500 ohm
R166	24366332	CF, 3300 ohm
R197	24366473	CF, 47k ohm
R198	24366224	CF, 220k ohm
R199	24366105	CF, 1M ohm
R208	24366152	CF, 1500 ohm
R211	24366102	CF, 1k ohm

Location No.	Part No.	Description
R212	24366103	CF, 10k ohm
R213	24366103	CF, 10k ohm
R214	24366182	CF, 1800 ohm
R215	24366152	CF, 1500 ohm
R216	24366333	CF, 33k ohm
R217	24366101	CF, 100 ohm
R218	24366472	CF, 4700 ohm
R219	24366472	CF, 4700 ohm
R220	24366473	CF, 47k ohm
R221	24366473	CF, 47k ohm
R222	24366473	CF, 47k ohm
R223	24366472	CF, 4700 ohm
R224	24366682	CF, 6800 ohm
R228	24366182	CF, 1800 ohm
R231	24366102	CF, 1k ohm
R233	24366152	CF, 1500 ohm
R237	24366561	CF, 560 ohm (2836DF)
R237	24366681	CF, 680 ohm (2536DF)
R242	24366183	CF, 18k ohm
R243	24366103	CF, 10k ohm
R244	24366203	CF, 20k ohm
R245	24366622	CF, 6200 ohm
R246	24366103	CF, 10k ohm
R247	24366101	CF, 100 ohm
R252	24066597	VR, 1k ohm, 1/10W
R253	24066597	VR, 1k ohm, 1/10W
R255	24066601	VR, 20k ohm, 1/10W
R260	24366333	CF, 33k ohm
R261	24366153	CF, 15k ohm
R262	24366153	CF, 15k ohm
R266	24366153	CF, 15k ohm
R267	24366153	CF, 15k ohm
R268	24366184	CF, 180k ohm
R269	24366101	CF, 100 ohm
R270	24366822	CF, 8200 ohm
R281	24366104	CF, 100k ohm
R282	24366221	CF, 220 ohm
R283	24366391	CF, 390 ohm
R285	24366473	CF, 47k ohm
R286	24366473	CF, 47k ohm
R287	24366223	CF, 22k ohm
R289	24366473	CF, 47k ohm
R290	24366103	CF, 10k ohm
R301	24366221	CF, 220 ohm
R302	24366274	CF, 270k ohm
R303	24366563	CF, 56k ohm (2836DF)
R303	24366393	CF, 39k ohm (2536DF)
R304	24366243	CF, 24k ohm (2836DF)
R304	24366683	CF, 68k ohm (2536DF)
R305	24366151	CF, 150 ohm
R306	24366473	CF, 47k ohm (2836DF)
R306	24366823	CF, 82k ohm (2536DF)
R307	24366624	CF, 620k ohm (2836DF)
R307	24366304	CF, 300k ohm (2536DF)
R308	24366102	CF, 1k ohm
R309	24383511	OMF, 510 ohm, 2W (2836DF)
R309	24383561	OMF, 560 ohm, 2W (2536DF)
R311	24366473	CF, 47k ohm
R312	24366204	CF, 200k ohm
R313	24366104	CF, 100k ohm
R314	24366105	CF, 1M ohm
R315	24366155	CF, 1.5M ohm
R316	24366154	CF, 150k ohm
R317	24366103	CF, 10k ohm

Location No.	Part No.	Description
R318	24366101	CF, 100 ohm
R319	24366101	CF, 100 ohm
R320	24366101	CF, 100 ohm
R321	24366102	CF, 1k ohm
R322	24321159	MF, 1.5 ohm, 1/2W
R323	24322688	MF, 0.68 ohm, 1W
⚠R327	24339569	MF, 5.6 ohm, 2W
R329	24366223	CF, 22k ohm
R334	24383561	OMF, 560 ohm, 2W
R336	24383331	OMF, 330 ohm, 2W
R340	24382271	OMF, 270 ohm, 1W
R342	24366103	CF, 10k ohm
R343	24366103	CF, 10k ohm
R344	24366392	CF, 3900 ohm
R345	24366103	CF, 10k ohm
R346	24366103	CF, 10k ohm
R402	24366273	CF, 27k ohm
R403	24366272	CF, 2700 ohm
R404	24552472	OMF, 4700 ohm, 1/2W
R405	24366431	CF, 430 ohm
R406	24366221	CF, 220 ohm
R407	24366131	CF, 130 ohm
R408	24366562	CF, 5600 ohm
R409	24366204	CF, 200k ohm
R410	24552472	OMF, 4700 ohm, 1/2W
R411	24366561	CF, 560 ohm
R413	24366151	CF, 150 ohm
R415	24382272	OMF, 2700 ohm, 1W
R416	24510562	Cement, 5600 ohm, 5W
R421	24366104	CF, 100k ohm
R430	24366272	CF, 2700 ohm
R431	24366102	CF, 1k ohm
R432	24366473	CF, 47k ohm
R433	24366333	CF, 33k ohm
R434	24366123	CF, 12k ohm
R440	24366103	CF, 10k ohm
R441	24366103	CF, 10k ohm
R442	24382102	OMF, 1k ohm, 1W
R444	24322398	MF, 0.39 ohm, 1W
⚠R446	24533151	FR, 150 ohm, 2W
⚠R448	24338338	MF, 0.33 ohm, 1W
R452	24069547	VR, 5k ohm, 0.08W, CC
R470	24322568	MF, 0.56 ohm, 1W
R471	24366101	CF, 100 ohm
R472	24376393	CF, 39k ohm, 1/2W
R474	24366331	CF, 330 ohm
R475	24366102	CF, 1k ohm
R477	24366153	CF, 15k ohm
R501	24366561	CF, 560 ohm
R502	24366334	CF, 330k ohm
R504	24366391	CF, 390 ohm
R507	24366822	CF, 8200 ohm
R508	24366561	CF, 560 ohm
R509	24366203	CF, 20k ohm
R511	24366202	CF, 2k ohm
R512	24366182	CF, 1800 ohm
R513	24366122	CF, 1200 ohm
R514	24366562	CF, 5600 ohm
R515	24366221	CF, 220 ohm
R516	24366221	CF, 220 ohm
R517	24366221	CF, 220 ohm
R518	24366475	CF, 4.7M ohm
R520	24366102	CF, 1k ohm
R522	24366185	CF, 1.8M ohm

Location No.	Part No.	Description
R523	24366332	CF, 3300 ohm
R533	24366162	CF, 1600 ohm
R534	24366101	CF, 100 ohm
R535	24366471	CF, 470 ohm (2836DF)
R535	24366561	CF, 560 ohm (2536DF)
R536	24366103	CF, 10k ohm
R537	24366162	CF, 1600 ohm
R538	24366471	CF, 470 ohm (2836DF)
R538	24366561	CF, 560 ohm (2536DF)
R539	24366162	CF, 1600 ohm
R541	24366821	CF, 820 ohm
R542	24366201	CF, 200 ohm
R543	24366103	CF, 10k ohm
R544	24366101	CF, 100 ohm
R547	24366102	CF, 1k ohm
R548	24366102	CF, 1k ohm
R549	24366102	CF, 1k ohm
R551	24066955	VR, 1k ohm, 1/10W
R557	24066600	VR, 10k ohm, 1/10W
R558	24066600	VR, 10k ohm, 1/10W
R559	24066600	VR, 10k ohm, 1/10W
R565	24366101	CF, 100 ohm
R566	24366560	CF, 56 ohm (2836DF)
R566	24366101	CF, 100 ohm (2536DF)
R567	24366560	CF, 56 ohm (2836DF)
R567	24366101	CF, 100 ohm (2536DF)
R568	24366102	CF, 1k ohm
R570	24366272	CF, 2700 ohm
R571	24366272	CF, 2700 ohm
R572	24366272	CF, 2700 ohm
R580	24366391	CF, 390 ohm (2836DF)
R580	24366361	CF, 360 ohm (2536DF)
R581	24366331	CF, 330 ohm
R591	24383153	OMF, 15k ohm, 2W
R592	24383153	OMF, 15k ohm, 2W
R593	24383153	OMF, 15k ohm, 2W
R619	24366472	CF, 4700 ohm
R623	24366472	CF, 4700 ohm
R626	24366183	CF, 18k ohm
R627	24366203	CF, 20k ohm
R630	24366472	CF, 4700 ohm
R631	24366273	CF, 27k ohm
R632	24366203	CF, 20k ohm
R633	24366229	CF, 2.2 ohm
R634	24366229	CF, 2.2 ohm
R635	24366512	CF, 5100 ohm
R636	24366512	CF, 5100 ohm
R637	24366183	CF, 18k ohm
R638	24366183	CF, 18k ohm
R639	24366273	CF, 27k ohm
R641	24366103	CF, 10k ohm
R642	24366101	CF, 100 ohm
R660	24366183	CF, 18k ohm
R661	24366183	CF, 18k ohm
R662	24366103	CF, 10k ohm
R665	24366103	CF, 10k ohm
R666	24366103	CF, 10k ohm
R667	24366103	CF, 10k ohm
R668	24366103	CF, 10k ohm
R669	24366912	CF, 9100 ohm
R670	24366562	CF, 5600 ohm
R671	24366153	CF, 15k ohm
R673	24366362	CF, 3600 ohm
R674	24366102	CF, 1k ohm

Location No.	Part No.	Description
R675	24366362	CF, 3600 ohm
R676	24366203	CF, 20k ohm
R677	24366183	CF, 18k ohm
R681	24366562	CF, 5600 ohm
R682	24366203	CF, 20k ohm
R683	24366472	CF, 4700 ohm
R684	24531100	FR, 10 ohm, 1/2W
R687	24366103	CF, 10k ohm
R688	24366104	CF, 100k ohm
R689	24366103	CF, 10k ohm
⚠R801	24004914	Metal-Glazed Resistor, 5.6M ohm, 1/2W
R803	24382683	OMF, 68k ohm, 1W
R805	24366101	CF, 100 ohm
R810	24366122	CF, 1200 ohm
R812	24552103	OMF, 10k ohm, 1/2W
R813	24366272	CF, 2700 ohm
R815	24552102	OMF, 1k ohm, 1/2W
R816	24382180	OMF, 18 ohm, 1W
R817	24322278	MF, 0.27 ohm, 1W
R818	24321829	MF, 8.2 ohm, 1/2W
R819	24366472	CF, 4700 ohm
R820	24366101	CF, 100 ohm
R825	24366472	CF, 4700 ohm
R832	24321228	MF, 0.22 ohm, 1/2W
R833	24005007	Metal-Glazed Resistor, 8.2M ohm, 1W
R842	24366681	CF, 680 ohm
R843	24366821	CF, 820 ohm
R848	24552332	OMF, 3300 ohm, 1/2W
R860	24366681	CF, 680 ohm
R863	24366102	CF, 1k ohm
R865	24366681	CF, 680 ohm
R866	24366471	CF, 470 ohm
R867	24366103	CF, 10k ohm
R868	24366472	CF, 4700 ohm
R870	24383183	OMF, 18k ohm, 2W
R872	24569339	Cement, 3.3 ohm, 10W
⚠R878	24531560	FR, 56 ohm, 1/2W
R879	24366472	CF, 4700 ohm
⚠R884	24531120	FR, 12 ohm, 1/2W
⚠R890	24000875	PTC Thermistor, 18 ohm, ±20%, 290V
R893	24366103	CF, 10k ohm
R901	24552272	OMF, 2700 ohm, 1/2W
R902	24552272	OMF, 2700 ohm, 1/2W
R903	24552272	OMF, 2700 ohm, 1/2W
⚠R920	24000929	FR, 1.5 ohm, 2W
RA01	24366223	CF, 22k ohm
RA02	24366103	CF, 10k ohm
RA03	24366103	CF, 10k ohm
RA04	24366103	CF, 10k ohm
RA05	24366103	CF, 10k ohm
RA06	24366103	CF, 10k ohm
RA07	24366222	CF, 2200 ohm
RA10	24366473	CF, 47k ohm
RA11	24366102	CF, 1k ohm
RA12	24366103	CF, 10k ohm
RA13	24366103	CF, 10k ohm
RA16	24366101	CF, 100 ohm
RA18	24366101	CF, 100 ohm
RA19	24366102	CF, 1k ohm
RA20	24366331	CF, 330 ohm
RA21	24366331	CF, 330 ohm

Location No.	Part No.	Description
RA22	24366103	CF, 10k ohm
RA23	24366473	CF, 47k ohm
RA24	24366162	CF, 1600 ohm
RA25	24366162	CF, 1600 ohm
RA26	24366162	CF, 1600 ohm
RA27	24366223	CF, 22k ohm
RA28	24366223	CF, 22k ohm
RA29	24366562	CF, 5600 ohm
RA32	24366223	CF, 22k ohm
RA33	24366103	CF, 10k ohm
RA34	24366223	CF, 22k ohm
RA35	24366102	CF, 1k ohm
RA36	24366223	CF, 22k ohm
RA40	24366223	CF, 22k ohm
RA41	24366223	CF, 22k ohm
RA42	24366472	CF, 4700 ohm
RA43	24366103	CF, 10k ohm
RA44	24366101	CF, 100 ohm
RA45	24366102	CF, 1k ohm
RA46	24366102	CF, 1k ohm
RA47	24366103	CF, 10k ohm
RA60	24366392	CF, 3900 ohm
RA61	24366102	CF, 1k ohm
RA62	24366103	CF, 10k ohm
RA63	24366103	CF, 10k ohm
RA66	24366102	CF, 1k ohm
RA67	24366153	CF, 15k ohm
RA68	24366473	CF, 47k ohm
RA69	24366223	CF, 22k ohm
RA79	24366153	CF, 15k ohm
RA81	24366103	CF, 10k ohm
RA84	24366392	CF, 3900 ohm
RA85	24366392	CF, 3900 ohm
RA86	24366472	CF, 4700 ohm
RA87	24366472	CF, 4700 ohm
RA90	24366391	CF, 390 ohm
RA92	24366102	CF, 1k ohm
RA94	24366392	CF, 3900 ohm
RA95	24366392	CF, 3900 ohm
RA97	24366332	CF, 3300 ohm
RA98	24366682	CF, 6800 ohm
RA99	24366203	CF, 20k ohm
RB01	24366103	CF, 10k ohm
RB02	24366332	CF, 3300 ohm
RB03	24366103	CF, 10k ohm
RB04	24366103	CF, 10k ohm
RB05	24366332	CF, 3300 ohm
RB06	24366333	CF, 33k ohm
RB10	24366182	CF, 1800 ohm
RB11	24366471	CF, 470 ohm
RB12	24366333	CF, 33k ohm
RB13	24366564	CF, 560k ohm
RB14	24366123	CF, 12k ohm
RB15	24366392	CF, 3900 ohm
RB16	24366392	CF, 3900 ohm
RB19	24366223	CF, 22k ohm
⚠ RD01	24000211	FR, 15 ohm, 1/2W
RD02	24323229	OMF, 2.2 ohm, 2W
RD03	24366562	CF, 5600 ohm
RD04	24552102	OMF, 1k ohm, 1/2W
RD05	24552332	OMF, 3300 ohm, 1/2W
RD06	24366242	CF, 2400 ohm
RD07	24366273	CF, 27k ohm
RD08	24366114	CF, 110k ohm

Location No.	Part No.	Description
RD09	24366153	CF, 15k ohm
RD10	24366153	CF, 15k ohm
RF01	24366332	CF, 3300 ohm
RF03	24366100	CF, 10 ohm
RF04	24366273	CF, 27k ohm
RF05	24366472	CF, 4700 ohm
RF06	24366103	CF, 10k ohm
RF07	24366103	CF, 10k ohm
RF08	24366101	CF, 100 ohm
RF09	24366102	CF, 1k ohm
RF12	24366103	CF, 10k ohm
RF13	24366101	CF, 100 ohm
RF14	24366101	CF, 100 ohm
RF15	24366392	CF, 3900 ohm
RF16	24366103	CF, 10k ohm
RF17	24366332	CF, 3300 ohm
RF18	24366682	CF, 6800 ohm
RF19	24366101	CF, 100 ohm
RF20	24366102	CF, 1k ohm
RF21	24366102	CF, 1k ohm
RF22	24366101	CF, 100 ohm
RF23	24366102	CF, 1k ohm
RM03	24366182	CF, 1800 ohm
RM04	24366242	CF, 2400 ohm
RM26	24366153	CF, 15k ohm
RN01	24366101	CF, 100 ohm
RN02	24366152	CF, 1500 ohm
RN04	24366303	CF, 30k ohm
RN05	24366221	CF, 220 ohm
RN06	24366471	CF, 470 ohm
RN07	24366153	CF, 15k ohm
RN08	24366185	CF, 1.8M ohm
RN09	24366104	CF, 100k ohm
RN10	24366153	CF, 15k ohm
RN11	24366103	CF, 10k ohm
RN12	24366122	CF, 1200 ohm
RN13	24366103	CF, 10k ohm
RN15	24366473	CF, 47k ohm
RN16	24366473	CF, 47k ohm
RN18	24366473	CF, 47k ohm
RN19	24366475	CF, 4.7M ohm
RN20	24366103	CF, 10k ohm
RN21	24366473	CF, 47k ohm
RN22	24366473	CF, 47k ohm
RN24	24366332	CF, 3300 ohm
RN25	24366105	CF, 1M ohm
RN26	24366103	CF, 10k ohm
RN27	24366473	CF, 47k ohm
RN28	24366473	CF, 47k ohm
RN29	24366473	CF, 47k ohm
RN30	24366473	CF, 47k ohm
RN34	24366104	CF, 100k ohm
RN35	24366681	CF, 680 ohm
RV01	24366101	CF, 100 ohm
RV02	24366102	CF, 1k ohm
RV03	24366472	CF, 4700 ohm
RV04	24366472	CF, 4700 ohm
RV05	24366101	CF, 100 ohm
RV06	24366102	CF, 1k ohm
RV07	24366101	CF, 100 ohm
RV08	24366102	CF, 1k ohm
RV10	24366101	CF, 100 ohm
RV11	24366472	CF, 4700 ohm
RV12	24366472	CF, 4700 ohm

Location No.	Part No.	Description
RV13	24366101	CF, 100 ohm
RV16	24366104	CF, 100k ohm
RV17	24366223	CF, 22k ohm
RV18	24366473	CF, 47k ohm
RV21	24366101	CF, 100 ohm
RV22	24366101	CF, 100 ohm
RV23	24366471	CF, 470 ohm
RV24	24552331	OMF, 330 ohm, 1/2W
⚠RV25	24019261	FR, 47 ohm, ±2%, 1/4W
RV26	24366222	CF, 2200 ohm
RV27	24366104	CF, 100k ohm
RV28	24366104	CF, 100k ohm
RV29	24366471	CF, 470 ohm
RV30	24366152	CF, 1500 ohm
RV31	24366910	CF, 91 ohm
RV32	24366910	CF, 91 ohm
RV34	24366151	CF, 150 ohm
RV36	24366101	CF, 100 ohm
RV37	24366104	CF, 100k ohm
RV38	24366104	CF, 100k ohm
RV39	24366101	CF, 100 ohm
RV40	24366680	CF, 68 ohm
RV41	24366103	CF, 10k ohm
RV42	24366750	CF, 75 ohm
RV43	24366620	CF, 62 ohm
RV44	24366620	CF, 62 ohm
RV45	24366620	CF, 62 ohm
RV47	24366101	CF, 100 ohm
RV48	24382680	OMF, 68 ohm, 1W
RV49	24366102	CF, 1k ohm
RV60	24382560	OMF, 56 ohm, 1W
RV61	24366130	CF, 13 ohm
RV62	24366130	CF, 13 ohm
RV63	24366130	CF, 13 ohm
RV64	24366104	CF, 100k ohm
RV65	24366104	CF, 100k ohm
RV66	24366104	CF, 100k ohm
RV67	24366104	CF, 100k ohm
RV71	24366101	CF, 100 ohm
RV72	24366103	CF, 10k ohm
RV73	24366680	CF, 68 ohm
RV74	24366472	CF, 4700 ohm
RV75	24366472	CF, 4700 ohm
RV76	24366101	CF, 100 ohm
RV77	24366152	CF, 1500 ohm
RV78	24366103	CF, 10k ohm
RV79	24366101	CF, 100 ohm
RV91	24366821	CF, 820 ohm
RW01	24366223	CF, 22k ohm
RW02	24366333	CF, 33k ohm
RW03	24366103	CF, 10k ohm
RW04	24366223	CF, 22k ohm
RW05	24366333	CF, 33k ohm
RW06	24366103	CF, 10k ohm
RW07	24552561	OMF, 560 ohm, 1/2W
RW08	24366103	CF, 10k ohm
RW09	24366123	CF, 12k ohm
RW10	24366103	CF, 10k ohm
RW11	24366103	CF, 10k ohm
RW12	24366123	CF, 12k ohm
RW13	24366103	CF, 10k ohm
RW14	24366123	CF, 12k ohm
RW15	24366123	CF, 12k ohm
RW25	24366681	CF, 680 ohm

Location No.	Part No.	Description
RW26	24366681	CF, 680 ohm
RX01	24366102	CF, 1k ohm
RX02	24366101	CF, 100 ohm
RX03	24366101	CF, 100 ohm
RX04	24366103	CF, 10k ohm
RX05	24366103	CF, 10k ohm
RX06	24366332	CF, 3300 ohm
RX07	24366122	CF, 1200 ohm
RX08	24366122	CF, 1200 ohm
RX09	24366122	CF, 1200 ohm
RX10	24366101	CF, 100 ohm
RX12	24366102	CF, 1k ohm
RX13	24366332	CF, 3300 ohm
RX14	24366103	CF, 10k ohm
RX15	24366473	CF, 47k ohm
RX19	24366201	CF, 200 ohm
RX20	24366152	CF, 1500 ohm
RX21	24366201	CF, 200 ohm
RX22	24366201	CF, 200 ohm
RX27	24366102	CF, 1k ohm

COILS & TRANSFORMERS

L150	23289120	Coil, Peaking, TRF4120AF
L201	23289100	Coil, Peaking, TRF4100AF
L202	23289470	Coil, Peaking, TRF4470AF
L301	23103859	Coil (Ferrite Bead), TEM2011
L302	23289101	Coil, Peaking, TRF4101AF
L315	23238714	Coil, Peaking, TRF4100AJ
L405	23221685	Coil, Choke, TLN3193
L406	23103859	Coil (Ferrite Bead), TEM2011
L412	23221684	Coil, Choke, TLN3191D
L414	23103859	Coil (Ferrite Bead), TEM2011
L421	23211897	Coil, Choke, AT4043/100T
L422	23221894	Coil, Choke, TLN3063
L441	23233948	Coil, Linearity, TLN2137G
⚠L462	----------	DY, Supplied with V901
L503	23238714	Coil, Peaking, TRF4100AJ
L551	23250972	Coil, 1H-Delay Matching, TRF5418D
L590	23289100	Coil, Peaking, TRF4100AF
L591	23289100	Coil, Peaking, TRF4100AF
L683	23238714	Coil, Peaking, TRF4100AJ
L684	23238714	Coil, Peaking, TRF4100AJ
L685	23238714	Coil, Peaking, TRF4100AJ
L686	23238714	Coil, Peaking, TRF4100AJ
L810	23103859	Coil (Ferrite Bead), TEM2011
L811	23103859	Coil (Ferrite Bead), TEM2011
L821	23222694	Coil, Width, TLN2026
L823	23221747	Coil, Choke, TRF9253D
L826	23221746	Coil, Choke, TLN3155D
L829	23103859	Coil (Ferrite Bead), TEM2011
L842	23103859	Coil (Ferrite Bead), TEM2011
L866	23289229	Coil, Peaking, TRF42R2AF
L880	23222694	Coil, Width, TLN2026
⚠L901	23200203	Coil, Degaussing, TSB-2330AR(2836DF)
⚠L901	23200202	Coil, Degaussing, TSB-2329AR(2536DF)
LA01	23289109	Coil, Peaking, TRF41R0AF
LA12	23221803	Coil, Choke, TLN3040D
LB01	23262001	Coil, IF, TRF1166D
LD02	23221896	Coil, Choke, TLN3061
LF02	23238712	Coil, Peaking, TRF4150AJ
LF03	23238720	Coil, Peaking, TRF4339AJ

Location No.	Part No.	Description
LF04	23238562	Coil, Peaking, TRF4109AJ
LF05	23238714	Coil, Peaking, TRF4100AJ
LF06	23238714	Coil, Peaking, TRF4100AJ
LF07	23238714	Coil, Peaking, TRF4100AJ
LF08	23238714	Coil, Peaking, TRF4100AJ
LF09	23238506	Coil, Peaking, TRF4229AJ
LF10	23238506	Coil, Peaking, TRF4229AJ
LF11	23103859	Coil (Ferrite Bead), TEM2011
LF12	23238506	Coil, Peaking, TRF4229AJ
LF13	23238714	Coil, Peaking, TRF4100AJ
LM01	23262797	Coil, IF, TRF1093D
LM02	23250865	Coil, IF, TRF5414DA
LM03	23250865	Coil, IF, TRF5414DA
LM04	23262798	Coil, IF, TRF1092D
LN01	23238711	Coil, Peaking, TRF4180AJ
LN02	23238714	Coil, Peaking, TRF4100AJ
LN03	23238710	Coil, Peaking, TRF4220AJ
LV01	23289220	Coil, Peaking, TRF4220AF
⚠T401	23224336	Transformer, Horiz. Drive, TLN1083
⚠T461	23236454	Transformer, Flyback, TFB4117AR
⚠T801	23211891	Line Filter, TRF3164
⚠T803	23217214	Transformer, Converter, TPW3283AR

SEMICONDUCTORS

IC151	B0372960	IC, TA78L009AP
IC301	B0378560	IC, TA8427K
IC302	B0384683	IC, TA8859AP
IC408	23319314	IC, μPC2412HF
IC501	B0383827	IC, TA8759BN
IC602	23319808	IC, M5218AP
IC603	23319808	IC, M5218AP
IC605	B0376856	IC, TA8211AH
IC670	B0470532	IC, TC4053BP
⚠IC827	A6907751	IC, S1854
IC835	23318299	IC, L78MR05
ICA01	23904890	IC, 85332A-105S
ICA02	23904762	IC, ST24C04CB6
ICA10	23319935	IC, MM1096BS
ICF02	23904779	IC, SAA5281P/E
ICV01	B0383720	IC, TA8747N
ICX01	23119139	IC, AN5862K
Q152	23314794	Transistor, 2PC1815Y
Q153	23314794	Transistor, 2PC1815Y
Q154	A6317764	Transistor, 2SC1815-GR
Q155	A6534077	Transistor, 2SA1015-GR(T)
Q156	23314794	Transistor, 2PC1815Y
Q190	A6002060	Transistor, RN1206
Q191	A6041860	Transistor, 2SK117-GR
Q205	23314794	Transistor, 2PC1815Y
Q208	23314794	Transistor, 2PC1815Y
Q213	23314794	Transistor, 2PC1815Y
Q214	A6342206	Transistor, 2SC2878-A(TE)
Q215	A6342206	Transistor, 2SC2878-A(TE)
Q216	A6002040	Transistor, RN1204
Q240	23314794	Transistor, 2PC1815Y
Q340	23314794	Transistor, 2PC1815Y
Q402	A678971D	Transistor, 2SC1569 FA-5
⚠Q404	A6872801	Transistor, 2SD2253
Q430	23314794	Transistor, 2PC1815Y
Q470	A6547250	Transistor, 2SA1320
Q505	A6363200	Transistor, 2SC3619

Location No.	Part No.	Description
Q506	23314794	Transistor, 2PC1815Y
Q507	A6363200	Transistor, 2SC3619
Q508	23314794	Transistor, 2PC1815Y
Q509	A6363200	Transistor, 2SC3619
Q510	23314794	Transistor, 2PC1815Y
Q514	A6509127	Transistor, 2SA562TM-O
Q516	A6321265	Transistor, 2SC2120-Y(TE)
Q604	23314791	Transistor, 2PA1015Y
Q607	A6002040	Transistor, RN1204
Q608	A6010040	Transistor, RN2004
Q621	A6342206	Transistor, 2SC2878-A(TE)
Q622	A6342206	Transistor, 2SC2878-A(TE)
Q671	A6342206	Transistor, 2SC2878-A(TE)
Q673	A6342206	Transistor, 2SC2878-A(TE)
Q801	23904247	IC, STR-S6708
Q802	23314141	Transistor, 2SC3852
⚠Q826	A8643108	IC, Photo Coupler, TLP621(GR-LF)
Q828	23314794	Transistor, 2PC1815Y
Q831	23314794	Transistor, 2PC1815Y
Q836	23314791	Transistor, 2PA1015Y
Q861	23314141	Transistor, 2SC3852
Q870	A6333346	Transistor, 2SC2655-Y(C)
Q871	23314794	Transistor, 2PC1815Y
QA06	23314794	Transistor, 2PC1815Y
QB01	23314794	Transistor, 2PC1815Y
QB02	23314794	Transistor, 2PC1815Y
QB11	23314794	Transistor, 2PC1815Y
QB12	23314791	Transistor, 2PA1015Y
QD01	A6625365	Transistor, 2SB688-O(BS)
QD02	23314794	Transistor, 2PC1815Y
QD03	23314794	Transistor, 2PC1815Y
QF04	23314794	Transistor, 2PC1815Y
QF05	23314794	Transistor, 2PC1815Y
QF06	23314794	Transistor, 2PC1815Y
QN02	23314791	Transistor, 2PA1015Y
QN03	23314791	Transistor, 2PA1015Y
QN04	A6342206	Transistor, 2SC2878-A(TE)
QN05	A6342206	Transistor, 2SC2878-A(TE)
QN07	A6000020	Transistor, RN1002
QN08	23314794	Transistor, 2PC1815Y
QN13	A6342206	Transistor, 2SC2878-A(TE)
QN15	A6342206	Transistor, 2SC2878-A(TE)
QV03	A6342206	Transistor, 2SC2878-A(TE)
QV04	A6319311	Transistor, 2SC1959-Y(TE)
QV05	23314791	Transistor, 2PA1015Y
QV06	23314791	Transistor, 2PA1015Y
QV07	23314794	Transistor, 2PC1815Y
QW01	23314791	Transistor, 2PA1015Y
QW02	23314791	Transistor, 2PA1015Y
QW03	23314791	Transistor, 2PA1015Y
QW04	23314791	Transistor, 2PA1015Y
QX02	A6534077	Transistor, 2SA1015-GR(T)
QX03	A6734585	Transistor, 2SC752(G)TM-O
QX04	23314794	Transistor, 2PC1815Y
QX05	23314794	Transistor, 2PC1815Y
QX06	23314794	Transistor, 2PC1815Y
QX07	23314794	Transistor, 2PC1815Y
QX09	23314794	Transistor, 2PC1815Y
QX10	23314794	Transistor, 2PC1815Y
QY09	A6000020	Transistor, RN1002
D108	23316756	Diode, Zener, MTZJ33D
D151	23115599	Diode, 1N4148
D152	23115599	Diode, 1N4148

Location No.	Part No.	Description
D201	A7150041	Diode, 1SS104
D203	23115599	Diode, 1N4148
D204	23115599	Diode, 1N4148
D205	23115599	Diode, 1N4148
D246	23115599	Diode, 1N4148
D301	23118479	Diode, BYD33J
D302	23118479	Diode, BYD33J
D303	23115599	Diode, 1N4148
D320	23118822	Diode, ERB12-02
D321	23118822	Diode, ERB12-02
D332	23316794	Diode, SC570A
D401	23316333	Diode, Zener, UZ12BSB
D402	23316348	Diode, Zener, UZ20BSB
D403	23316333	Diode, Zener, UZ12BSB
D406	23118479	Diode, BYD33J
D408	23118052	Diode, RU4Z
D410	23316321	Diode, Zener, UZ8.2BSB
D471	A7801205	SCR, SF0R3G42
D474	23316342	Diode, Zener, UZ16BSB
D475	23316333	Diode, Zener, UZ12BSB
D590	23115599	Diode, 1N4148
D591	23115599	Diode, 1N4148
D592	23115599	Diode, 1N4148
D594	23115599	Diode, 1N4148
D595	23115599	Diode, 1N4148
D596	23115599	Diode, 1N4148
D601	23115599	Diode, 1N4148
D636	23115599	Diode, 1N4148
D637	23115599	Diode, 1N4148
D638	23115599	Diode, 1N4148
D639	23115599	Diode, 1N4148
D640	23115599	Diode, 1N4148
D641	23115599	Diode, 1N4148
D801	23118037	Diode, RBV406M LF-B
D802	23118479	Diode, BYD33J
D803	23118479	Diode, BYD33J
D804	23316315	Diode, Zener, UZ6.8BSB
D805	23115599	Diode, 1N4148
D806	23118479	Diode, BYD33J
D807	23118479	Diode, BYD33J
D808	23118479	Diode, BYD33J
D809	23316309	Diode, Zener, UZ5.6BSB
D810	23115599	Diode, 1N4148
D811	23115599	Diode, 1N4148
D812	23115599	Diode, 1N4148
D813	23118479	Diode, BYD33J
D814	23115599	Diode, 1N4148
D815	23316339	Diode, Zener, UZ15BSB
D816	23316311	Diode, Zener, UZ6.2BSA
D825	23115599	Diode, 1N4148
D826	23115599	Diode, 1N4148
D830	23118052	Diode, RU4Z
D831	23118479	Diode, BYD33J
D832	23118451	Diode, RU-4A
D844	23316332	Diode, Zener, UZ12BSA
D848	23316302	Diode, Zener, UZ4.7BSB
D861	23316310	Diode, Zener, UZ5.6BSC
D874	23316307	Diode, Zener, UZ5.1BSC
D875	23115599	Diode, 1N4148
D878	23316308	Diode, Zener, UZ5.6BSA
DA02	23316312	Diode, Zener, UZ6.2BSB
DA03	23316312	Diode, Zener, UZ6.2BSB
DA04	23115599	Diode, 1N4148
DA05	23115599	Diode, 1N4148

Location No.	Part No.	Description
DA06	23115599	Diode, 1N4148
DA15	23316312	Diode, Zener, UZ6.2BSB
DA96	23316312	Diode, Zener, UZ6.2BSB
DA98	23316312	Diode, Zener, UZ6.2BSB
DA99	23316312	Diode, Zener, UZ6.2BSB
DD01	23118479	Diode, BYD33J
DD02	23316582	Diode, ERC20-06
DD03	23118479	Diode, BYD33J
DD04	23115599	Diode, 1N4148
DD05	23316332	Diode, Zener, UZ12BSA
DD06	23316309	Diode, Zener, UZ5.6BSB
DD07	23316309	Diode, Zener, UZ5.6BSB
DE50	23358504	Diode (LED), SCL003URC3FX, Red
DN01	23115599	Diode, 1N4148
DV01	23316327	Diode, Zener, UZ10BSB
DV03	23316327	Diode, Zener, UZ10BSB
DV04	23316327	Diode, Zener, UZ10BSB
DV05	23316327	Diode, Zener, UZ10BSB
DV06	23316327	Diode, Zener, UZ10BSB
DV07	23316327	Diode, Zener, UZ10BSB
DV08	23316324	Diode, Zener, UZ9.1BSB
DV40	23115599	Diode, 1N4148
DV44	23316302	Diode, Zener, UZ4.7BSB
DW01	23115599	Diode, 1N4148
DW02	23115599	Diode, 1N4148
DW03	23115599	Diode, 1N4148
DW04	23115599	Diode, 1N4148
DW05	23316299	Diode, Zener, UZ4.3BSB
DW06	23316304	Diode, Zener, UZ4.7BSC
DW07	23316336	Diode, Zener, UZ13BSB
DW08	23316336	Diode, Zener, UZ13BSB
DX03	23115599	Diode, 1N4148
DX04	23115599	Diode, 1N4148
DX05	23115599	Diode, 1N4148
DX06	23115599	Diode, 1N4148
DX07	23115599	Diode, 1N4148
DX08	23115599	Diode, 1N4148
DX09	23115599	Diode, 1N4148
DX10	23115599	Diode, 1N4148
DX11	23115599	Diode, 1N4148
DX12	23316302	Diode, Zener, UZ4.7BSB
DX13	23115599	Diode, 1N4148

MISCELLANEOUS

⚠F801	23144698	Fuse, 3.15A
F801A	23165433	Holder, Fuse
⚠F803	23144874	Fuse, 0.8A
F803A	23165433	Holder, Fuse
H005	23148217	Module, VIF FR, MVGS42A
H007	23148191	Module, NICAM/IGR/A.PRO, MPSE11
K901	23120220	Remote Sensor, IR-9109A-K
P150B	23902062	Connector, 5P
P410A	23902750	Connector, 7P
P410B	23368518	Connector, 7P
P411A	23902750	Connector, 7P
P411B	23368518	Connector, 7P
P412A	23902750	Connector, 7P
P412B	23368518	Connector, 7P
P413A	23902751	Connector, 8P
P413B	23368519	Connector, 8P
P501A	23368130	Connector, 10P
P501B	23902213	Connector, 10P

Location No.	Part No.	Description
⚠P801	23176697	Power Cord
PH01	23365598	21 Pin Connector
PH02	23365598	21 Pin Connector
PH20	23363252	Pin Jack, Yellow
PH21	23365508	Jack, Phono, 2P
PH23	23365546	Jack, 4P
S202	23344333	Switch, Lever, 1C3P
⚠S801	23145434	Switch, Power, 2C2P
SA01	23145428	Switch, Push, 1C1Px4
SA02	23145430	Switch, Push, 1C1P
⚠V901A	23902891	Socket, CRT, 10P
W201	23250878	Delay Line, TRF2083
W501	23250950	Coil, 1H-Delay Line, DL711
W661	23351086	Speaker, SPK-1358, 80x120mm, 8 ohm
W662	23351086	Speaker, SPK-1358, 80x120mm, 8 ohm
X401	23153721	Ceramic Resonator, 503kHz, TCR1023
X501	23153979	Crystal, 4.43MHz
X502	23153961	Crystal, 3.58MHz
XA01	23153845	Ceramic Resonator, 4MHz, TCR1015
Z150	23107949	Ceramic Filter, 6.5MHz, SFE6.5MBF
ZF01	23153012	Crystal, 27MHz
ZP31	23144452	Protector, PRF1000
ZP81	23144451	Protector, PRF5000
ZP82	23144452	Protector, PRF1000
ZZ01	23107849	Ceramic Video Trap, 4.43MHz, TCF1032
ZZ02	23107787	Ceramic Video Trap, 3.58MHz, TCF1044
PC BOARD ASSEMBLIES		
U901	23703663	CRT Drive Board, PB5106 (2836DF)
U901	23703303	CRT Drive Board, PB4833 (2536DF)
U902A	23703637	Signal Board, PB5080-1 (2836DF)
U902A	23703654	Signal Board, PB5097-1 (2536DF)
U902B	23703638	Chroma Board, PB5080-2 (2836DF)
U902B	23703655	Chroma Board, PB5097-2 (2536DF)
U902E	23703639	AM-Det Board, PB5080-4 (2837DF)
U902E	23703656	AM-Det Board, PB5097-4 (2537DF)
U903	23703622	Power/Def/Audio Board, PB5073 (2836DF)
U903	23703657	Power/Def/Audio Board, PB5098 (2536DF)
PICTURE TUBE		
⚠V901	23312386	Picture Tube, A66ECY13X31 (2836DF)
⚠V901	23312379	Picture Tube, A59ECY13X31 (2536DF)

Location No.	Part No.	Description
TUNER		
H001	23321069	Tuner, VHF/UHF, EG463L
ACCESSORIES		
K902	23120267	Remote Hand Unit, CT-9678
AT03	23305085	Battery Cover
Y101	23562234	Owner's Manual, French, 2836DF
Y101	23562238	Owner's Manual, French, 2536DF

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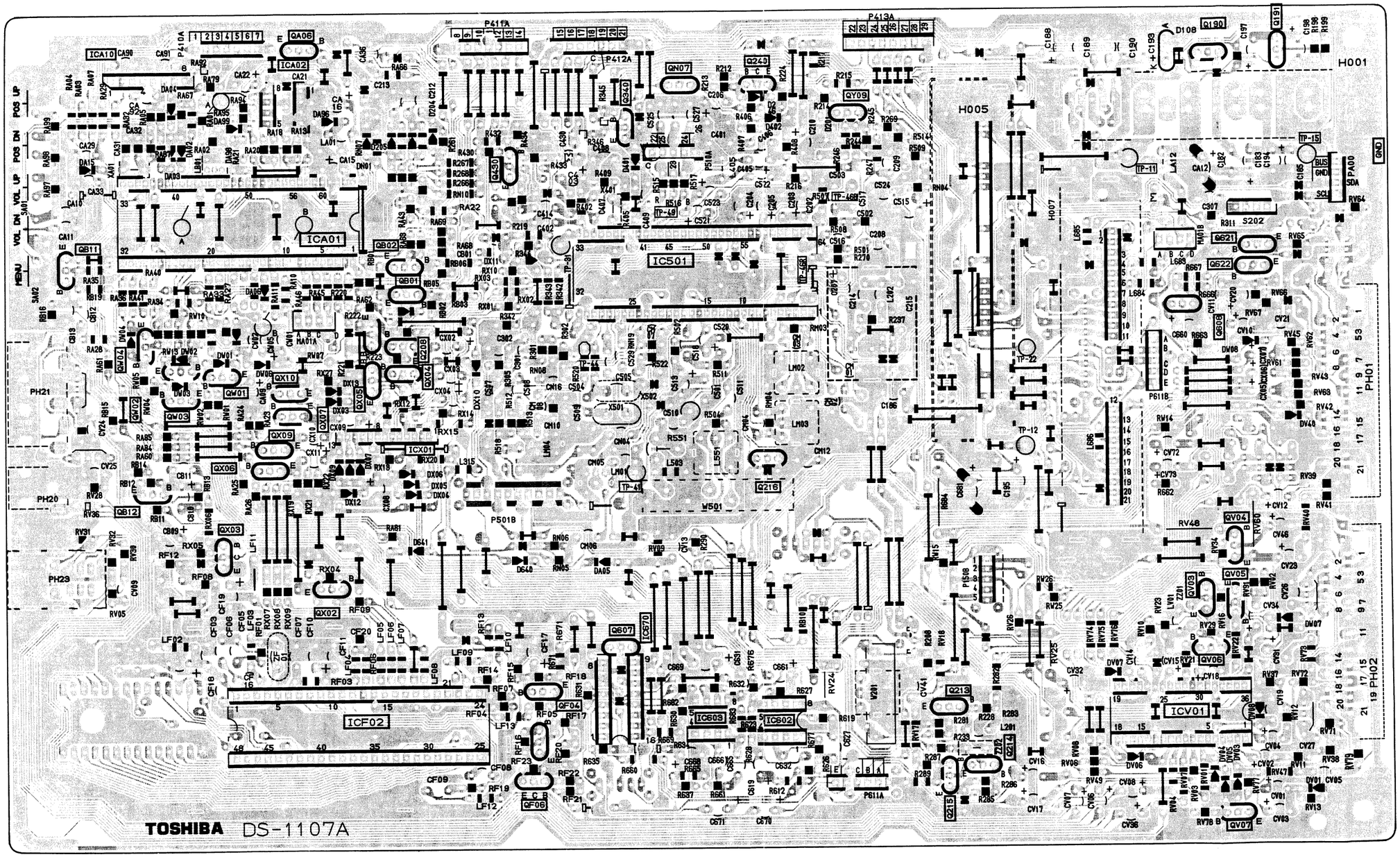
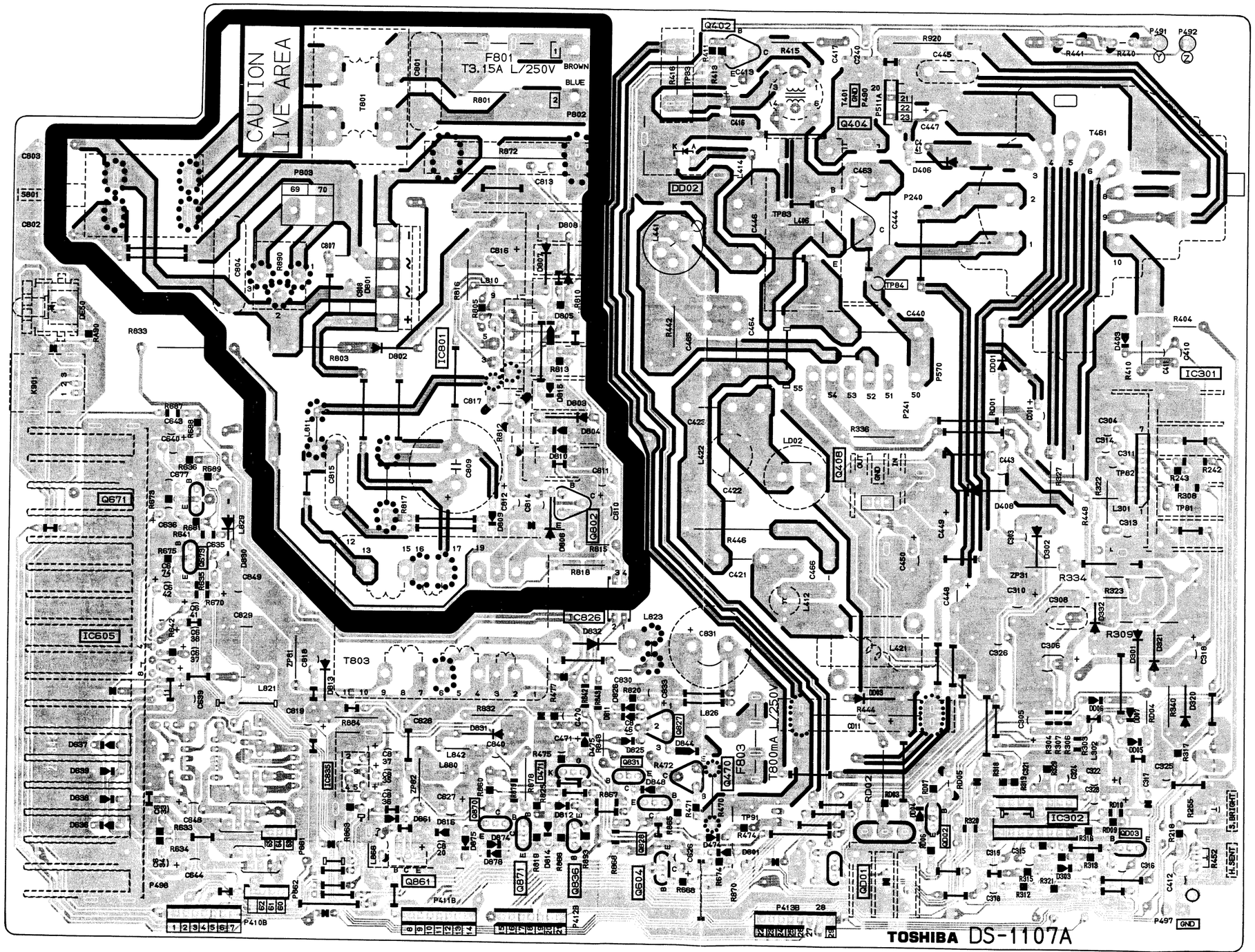
SIGNAL BOARD PB5080-1 (28")

BOTTOM (FOIL) SIDE



POWER/DEF/AUDIO BOARD PB5073 (28")

BOTTOM (FOIL) SIDE



SIGNAL BOARD PB5097-1 (25")

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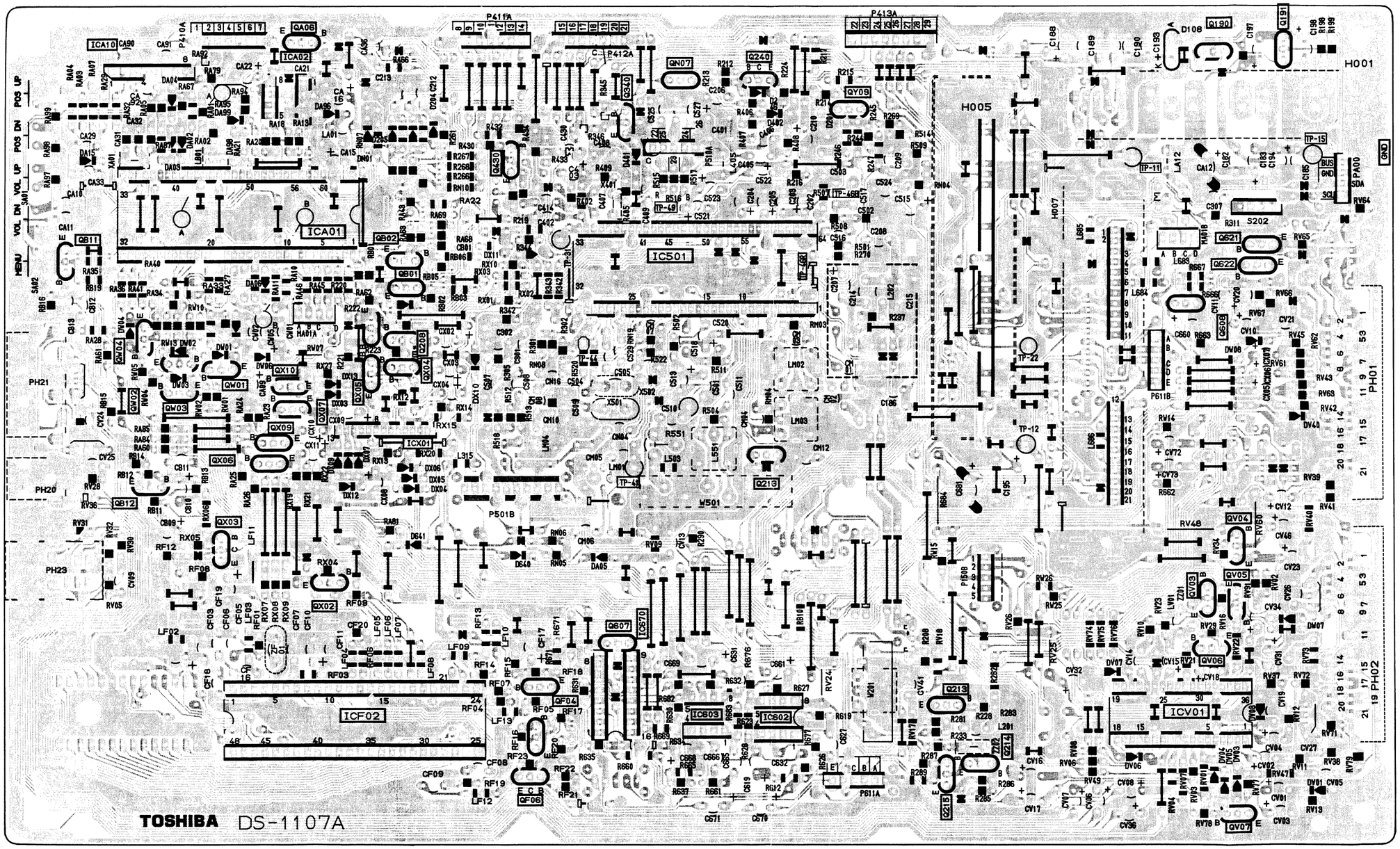

POWER/DEF/AUDIO BOARD PB5098 (25")

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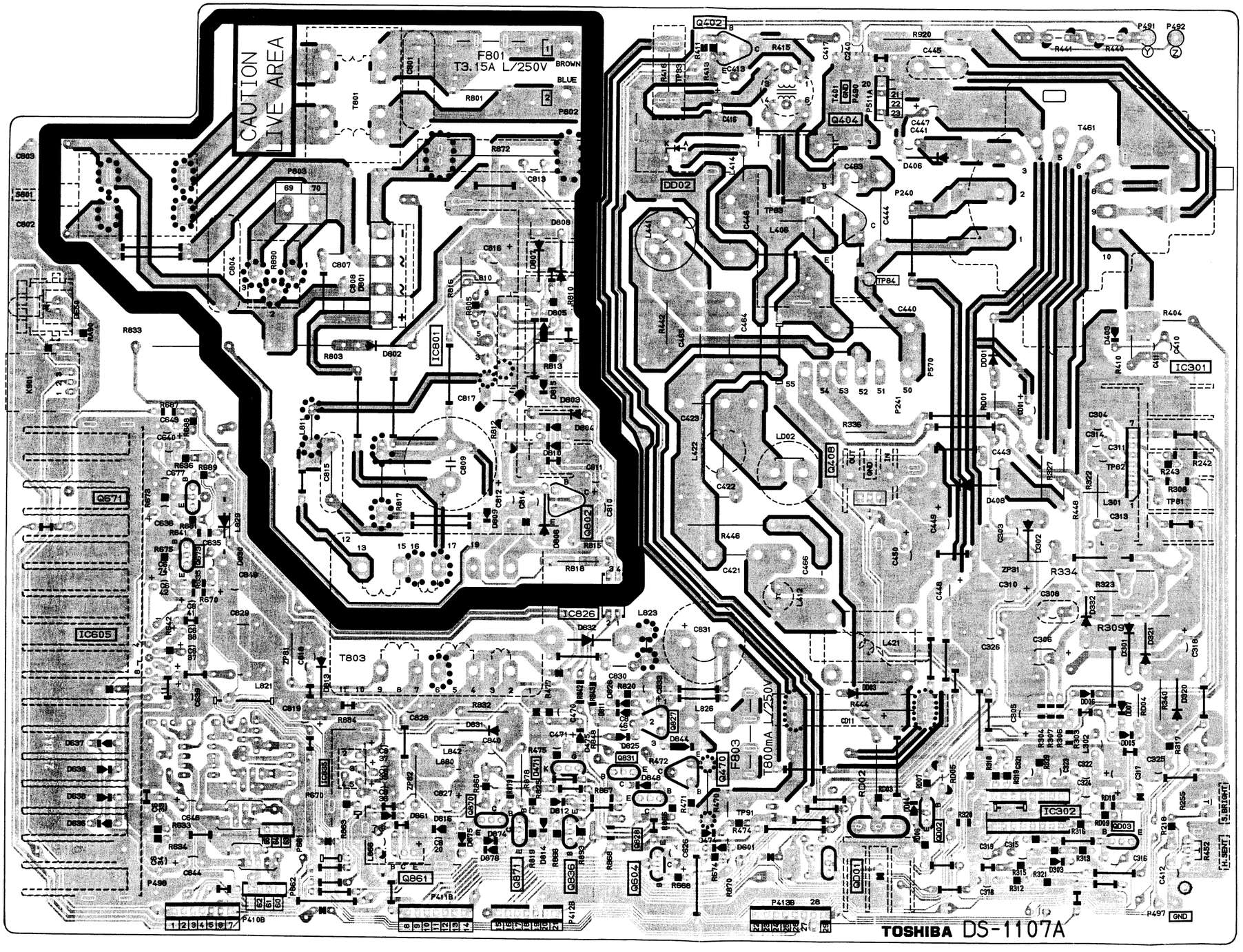

CRT DRIVE BOARD PB5106 (28")

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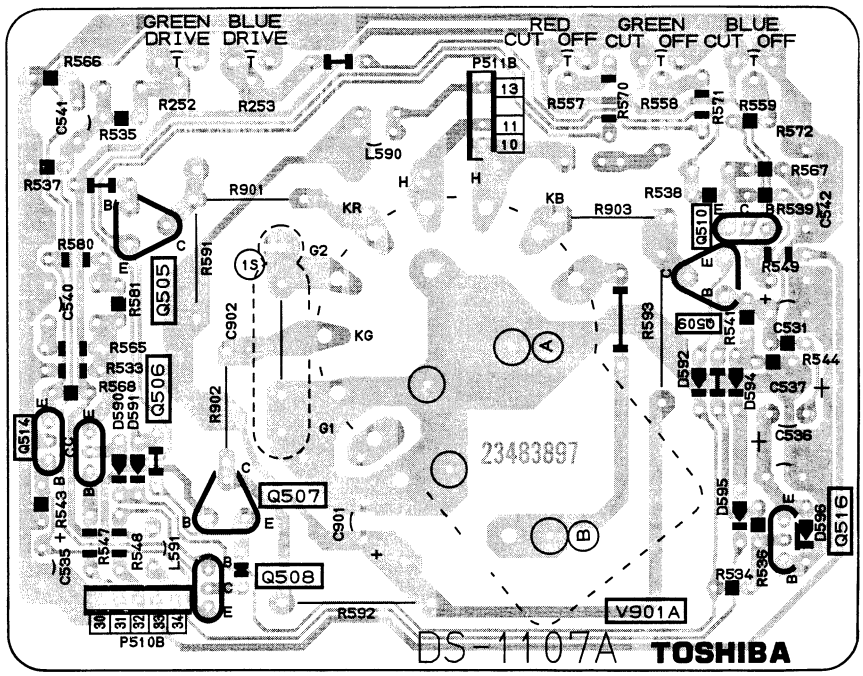

AM DET BOARD PB5080-4 (28")

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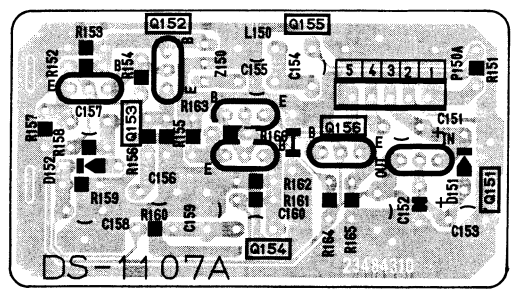
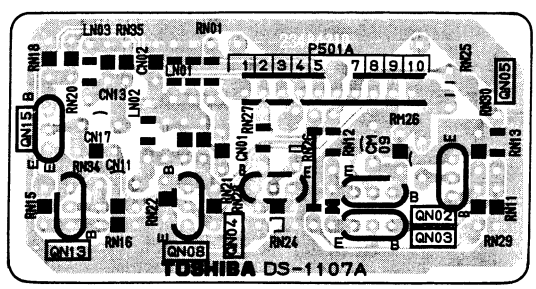


CHROMA-1 BOARD PB5080-2 (28")

BOTTOM (FOIL) SIDE



CRT DRIVE BOARD PB4833 (25")

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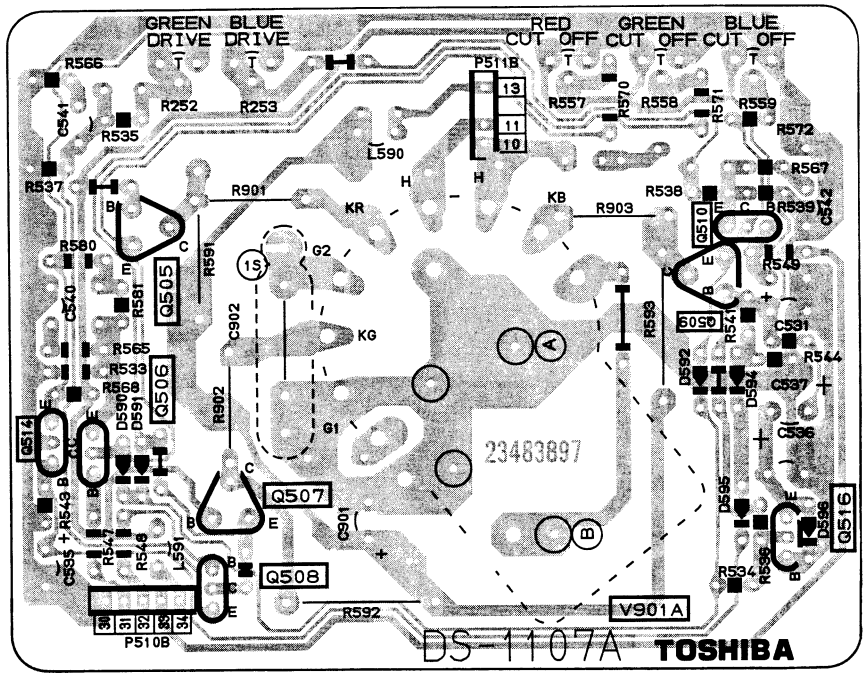
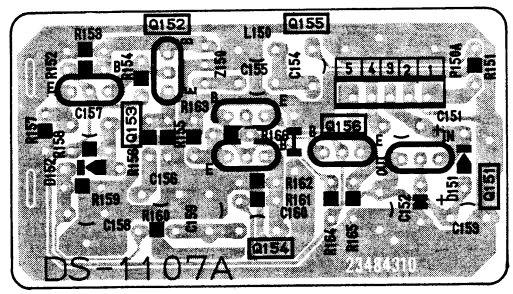


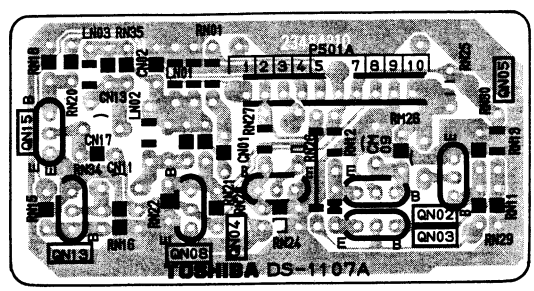
AM DET BOARD PB5097-4 (25")

BOTTOM (FOIL) SIDE



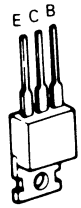
CHROMA-1 BOARD PB5097-2 (25")

BOTTOM (FOIL) SIDE



TERMINAL VIEW OF TRANSISTORS

① 2SC1569



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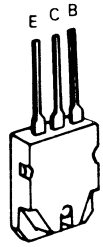

③ 2SC2580-C
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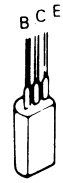
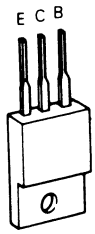
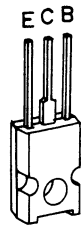


④ 2SA933S
2SA1015-Y
2SA1320-Y
2SC752GTM
2SC1685-Q
2SC1740S
2SC1815-N
2SC1959-Y
2SC2120-Y
2SC2878-A

⑤ 2SB1186A
2SC3852
2SD2253

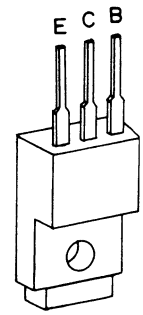


⑥ 2SC3619



⑦ RN1203
RN1204
RN1206
RN2004

⑧ 2SB1186A
2SD1763A



2836DF, 2536DF

SCHEMATIC DIAGRAM (1/2)

CAUTION: The international hazard symbols " ⚠ " in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2. Do not degrade the safety of the receiver through improper servicing.

OBSERVATION OF VOLTAGES AND WAVEFORMS

1. Voltage readings were obtained using a high impedance digital voltmeter.
2. (—) or ground lead of instruments should be connected to the ground marked (⊥) in the shematic on checking Non-isolated circuit surrounded by mark but should be connected to the points marked (⏚) on checking isolated circuit.
3. The voltage readings may vary as much as ±20%.
4. Check that the Tuning, A.F.C., Brightness, Contrast and Colour controls are adjusted for the best picture, making sure that the Contrast, Brightness and Colour controls are set near to their mid-positions.
5. The waveforms were taken using a standard colour bar signal and were observed using a wide band oscilloscope via a low capacity probe.

NOTES:

1. This circuit diagram is subject to change without notice.

EXPRESSION

VALUE OF RESISTOR, CAPACITOR and INDUCTOR

1. Resistance is shown in ohm, k=1,000, M=1,000,000.
2. Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in μF and the values more than 1 in pF.
3. Unless otherwise noted in schematic, all inductor values more than 1 are expressed in μH, and the values less than 1 in H.

GROUNDING SYMBOL

1. ⊥: Non isolated ground, ⏚ : Isolated ground.

RESISTOR

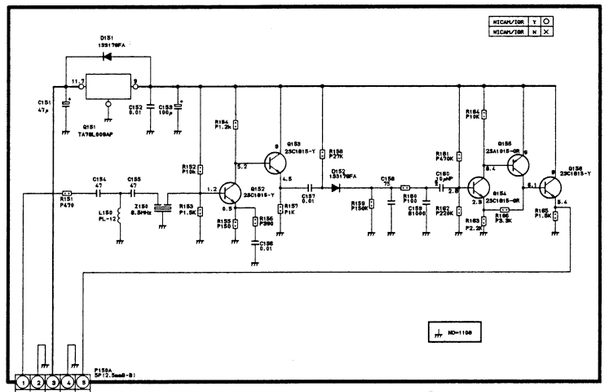
Prefixed to v

T	
Carbor	
Oxide M	
Ins. Car	
Wire	
Cement cc	
Fusit	

2536DF PAIR USED PARTS

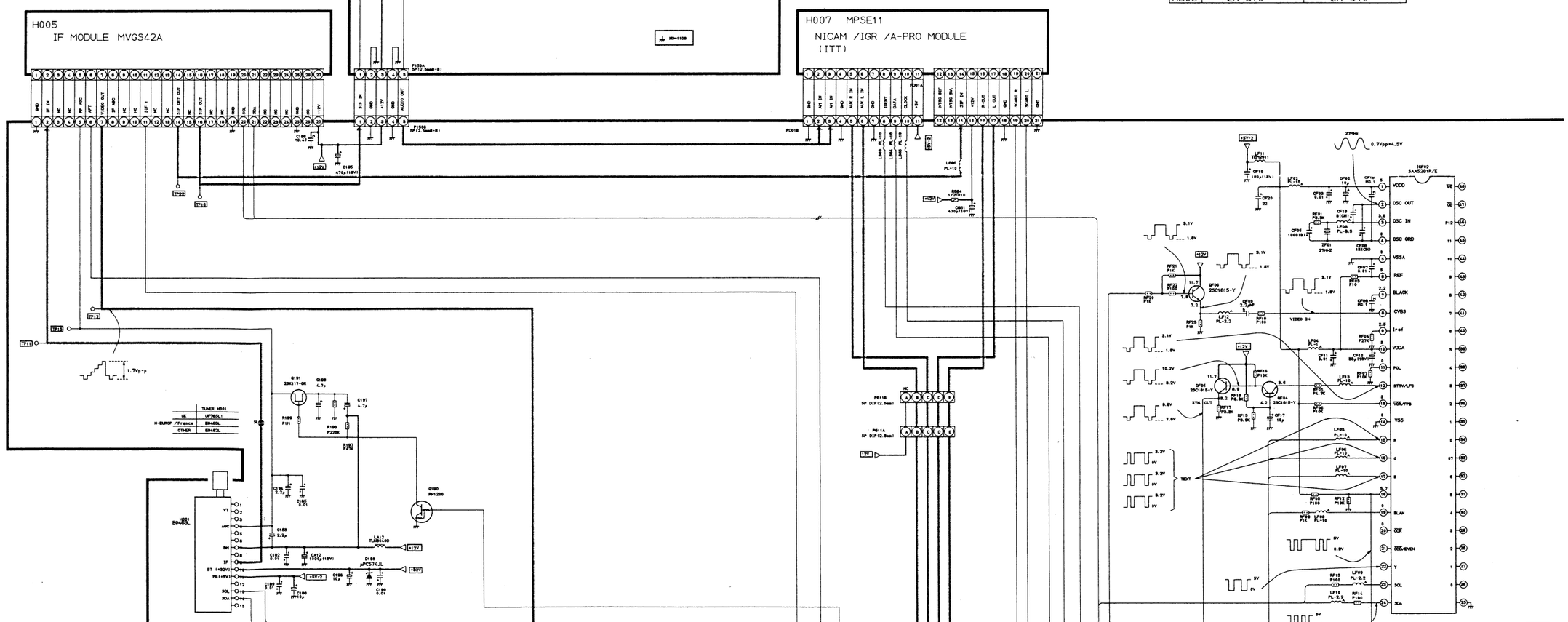
	(R1) VIDEO/COLOR	(R2) PHILIPS
V901	A59ECY13X31	A59EAK71X01
R303	1/6 56K	1/6 36K
R304	1/6 24K	1/6 51K
R306	1/6 47K	1/6 56K
R307	1/6 620K	1/6 390K
R309	2R 510	2R 470

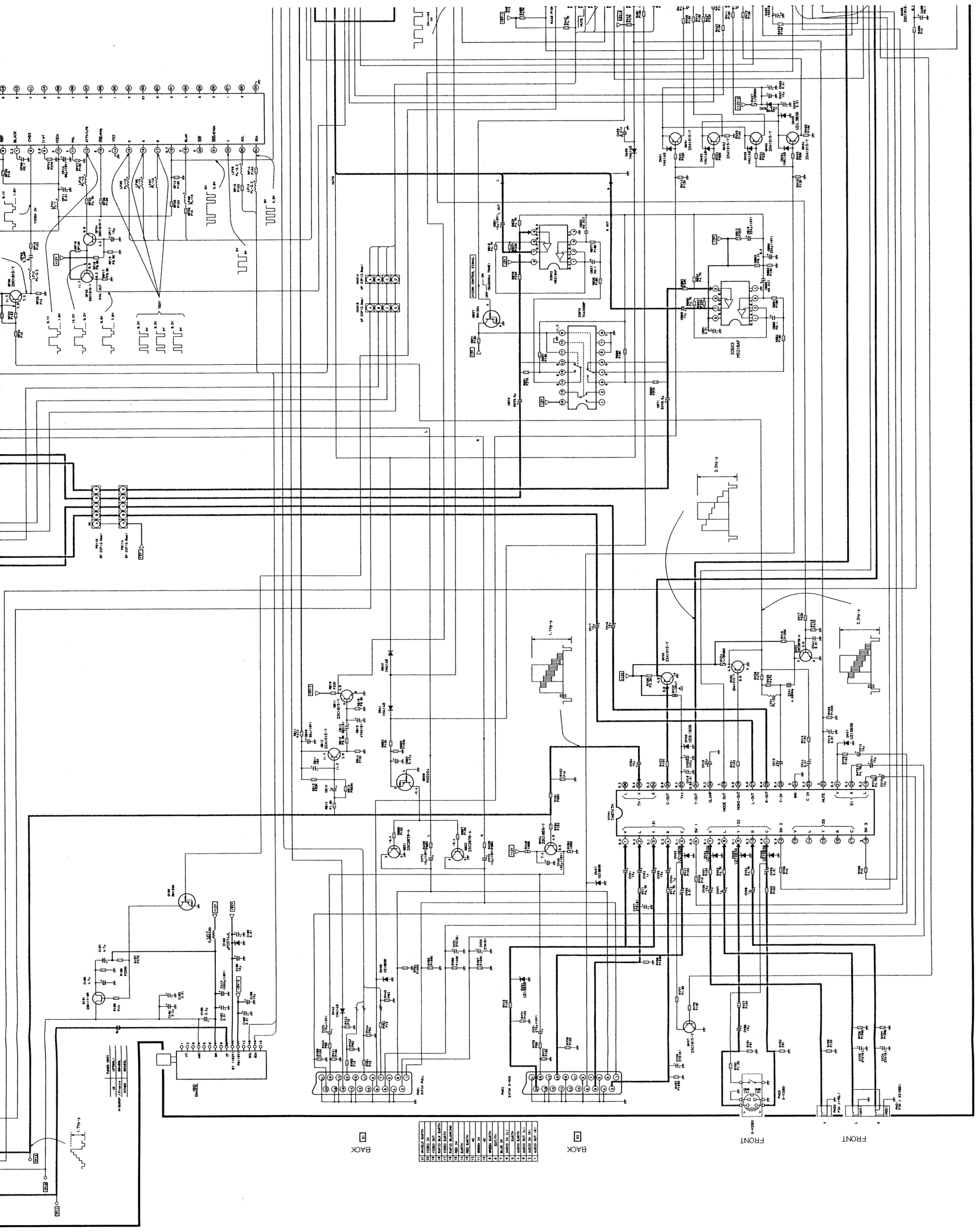
U902E AM DET BOARD PB5080-4 [28"] PB5097-4 [25"]



H005
IF MODULE MVGS42A

H007 MPSE11
NICAM /IGR /A-PRO MODULE
(ITT)




BACK
BACK
FRONT
FRONT
S-VIDEO
TUNER UNIT
PAL/SECAM
NTSC
AUDIO
SYNCHRO
TUNING
BAND SEL
AFT
IF
VT
MM
BM
SCL
SDA
TEST
MUTE
VIDEO IN
VIDEO OUT
AUDIO IN (L)
AUDIO IN (R)
AUDIO OUT (L)
AUDIO OUT (R)
SHIELD EARTH
VIDEO EARTH
AUDIO EARTH
AUDIO EARTH
AUDIO IN (L)
AUDIO IN (R)
AUDIO OUT (L)
AUDIO OUT (R)

1 are expressed in

1 are expressed in

RESISTORS

Prefixed to values:

TYPE	MARK
Carbon Comp.	S
Oxide Metal Film	R
Ins. Carbon Film	P
Wire Wound	W
Cement covered W.W.	NO MARK
Fusible Res.	FR

Suffixes to values:

TOLERANCE	MARK
±1%	(F)
±2%	(G)

Suffixes to VR values:

LAW	MARK
Linear	(B)
'C' Curve Characteristic	(C)

Rating Markings:

WATTAGE	MARK
1/6W	
1/4W	
1/2W	
1W	1
2W	2

WATTAGE	MARK
3W	3
5W	5
10W	10
15W	15
20W	20
25W	25

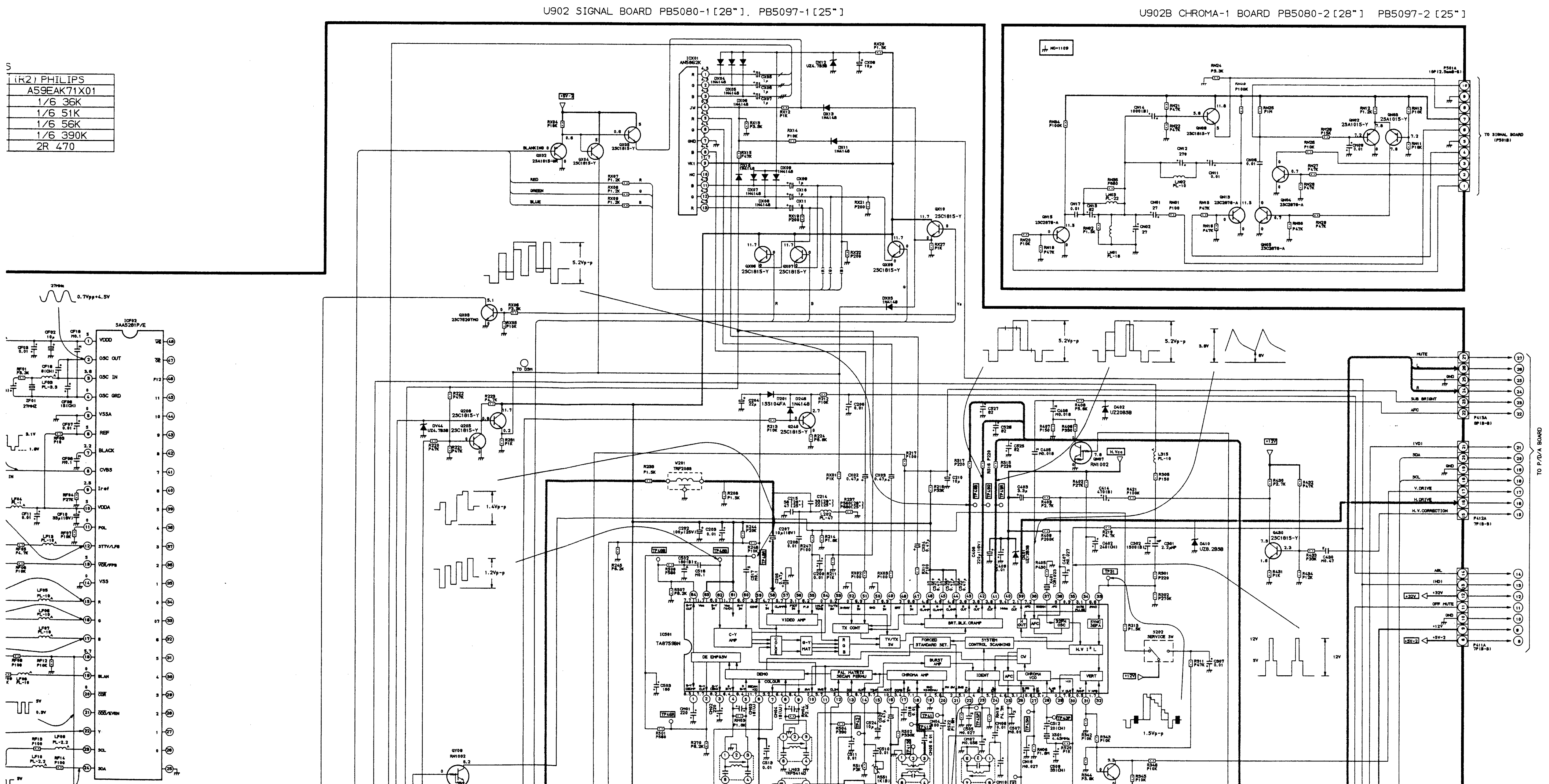
CAPACITORS

Rating Markings:

Type	Mark
Ceramic Disc 50V Only	
Electrolytic	
Electrolytic Non-Polar	
Variable Capacitor	
Other	

S

	(R2) PHILIPS
	A59EAK71X01
	1/6 36K
	1/6 51K
	1/6 56K
	1/6 390K
	2R 470



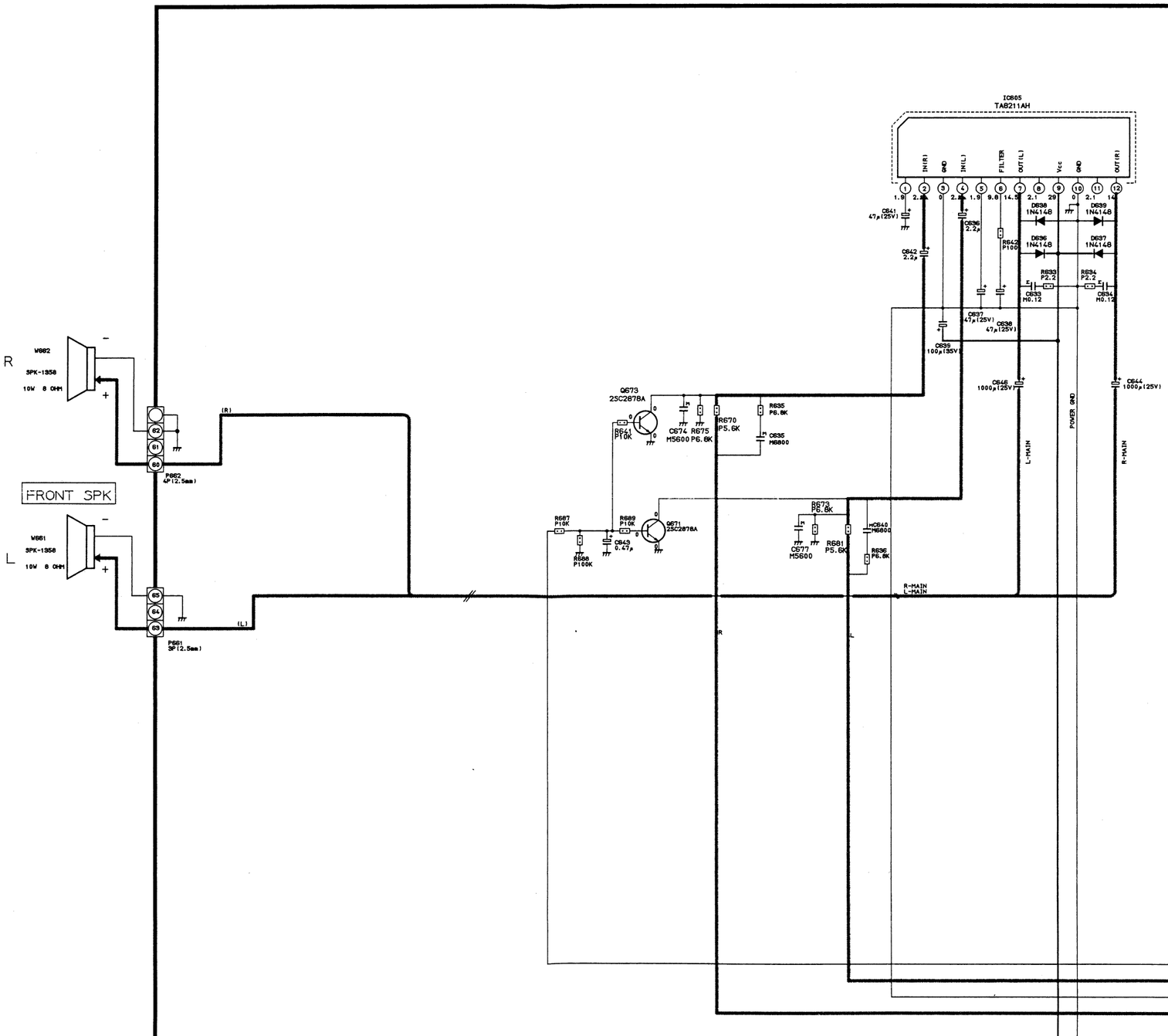
U901 CRT DRIVE BOARD PB5106 [28"]
PB4833 [25"]

2536DF PAIR USED PARTS

	(R1)V/C	(R2)PHILIPS
V901	A59ECY13X31	A59EAK71X01
R535	560 OHM	390 OHM
R538	560 OHM	470 OHM
C540	330P	300P
C541	330P	300P
C542	300P	270P

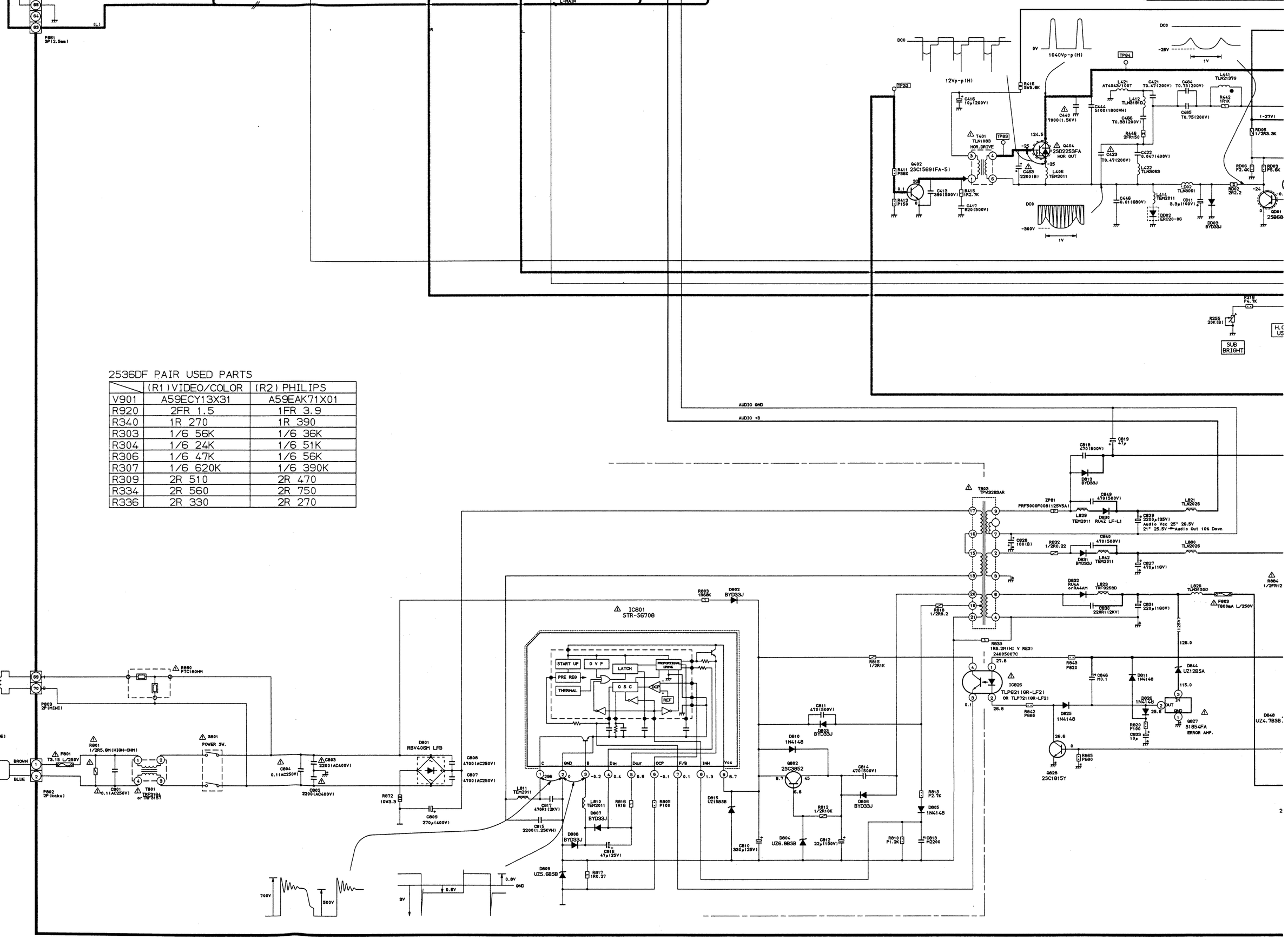
2836DF, 2536DF

SCHEMATIC DIAGRAM (2/2)

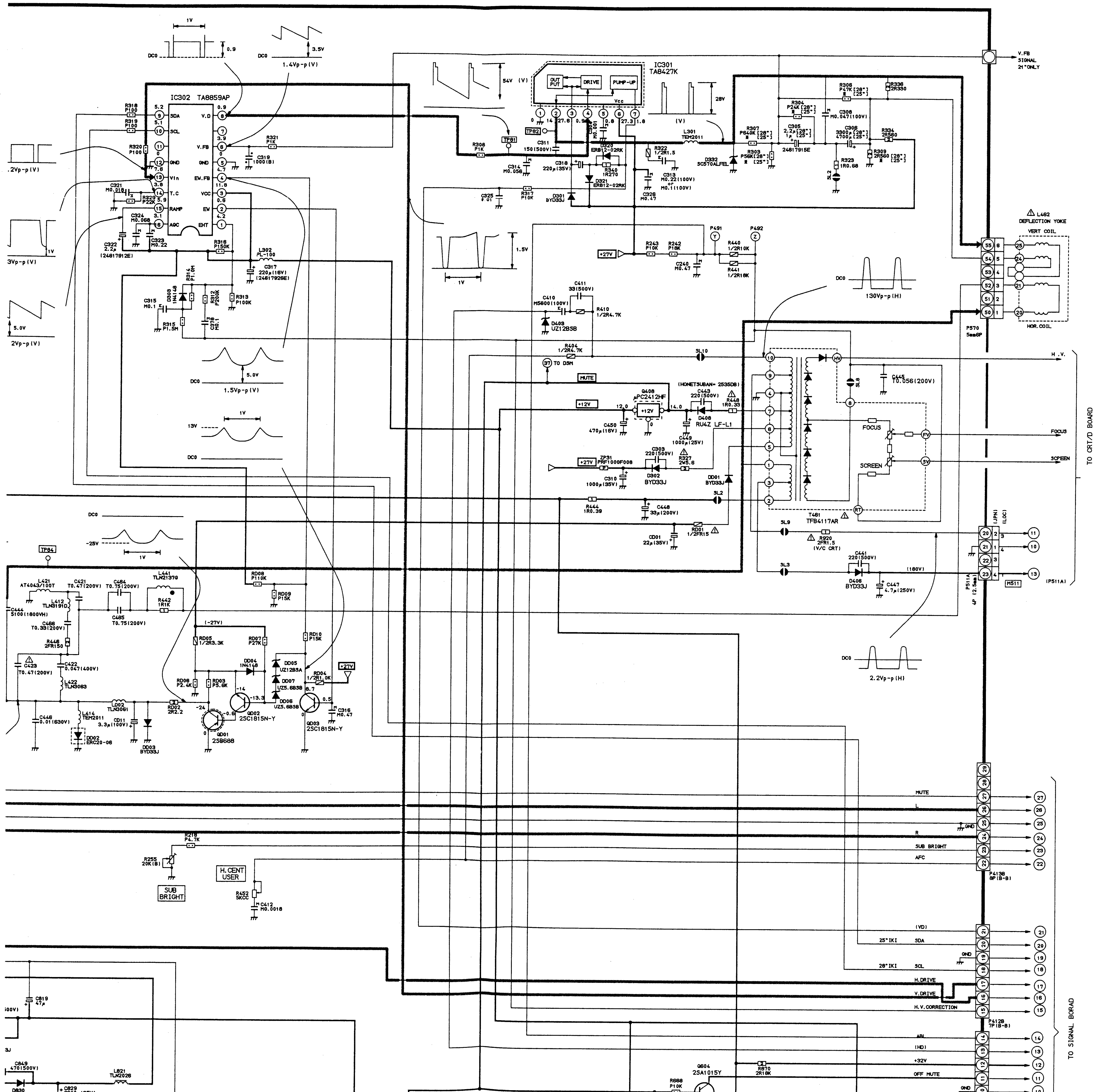


2536DF PAIR USED PARTS

	(R1)VIDEO/COLOR	(R2) PHILIPS
V901	A59ECY13X31	A59EAK71X01
R920	2FR 1.5	1FR 3.9
R340	1R 270	1R 390
R303	1/6 56K	1/6 36K
R304	1/6 24K	1/6 51K
R306	1/6 47K	1/6 56K
R307	1/6 620K	1/6 390K
R309	2R 510	2R 470
R334	2R 560	2R 750
R336	2R 330	2R 270



U903 POW. DEF. AUD. BOARD PB5073[28"] PB5098[25"]



IC302 TA8859AP
SDA
SCL
GND
Vin
T.C
RAMP
AGC
V.D
V.FB
EW.FB
VCC
EW
EHT
IC301 TA8427K
OUT PUT
DRIVE
PUMP-UP
Vcc
54V (V)
28V
1.4Vp-p(V)
1.5Vp-p(V)
130Vp-p(H)
2.2Vp-p(H)
TP81
TP82
TP84
+27V
+12V
MUTE
37 TO DSM
Q408 µPC2412HF
(HONETSUBAN= 2535D8)
D408 RU4Z LF-L1
ZP31 PRF1000F008
D302 BYD33J
DD01 BYD33J
T461 TFB4117AR
FOCUS
SCREEN
H.V.
V.FB SIGNAL 21"ONLY
L462 DEFLECTION YOKE
VERT COIL
HOR.COIL
P570 5mm6P
TO CRT/D BOARD
R920 2FR1.5 (V/C CRT)
(180V)
D406 BYD33J
C447 4.7µ(250V)
P511A 4P (2.5mm)
M511
(P511A)
L421 AT4043/100T
L412 TLN3191D
L441 TLN21370
L422 TLN3063
L414 TEM2011
LD02 TLN3061
DD02 ERC20-06
DD03 BYD33J
QD01 2SB688
QD02 2SC1815N-Y
QD03 2SC1815N-Y
DD05 UZ12BSA
DD07 UZ5.6BSB
DD06 UZ5.6BSB
(-27V)
R255 20K(B)
SUB BRIGHT
H.CENT USER
R452 5KCC
C412 M0.0018
MUTE
L
GND
R
SUB BRIGHT
AFC
P413B 8P(B-B)
(VD)
25"IKI SDA
28"IKI SCL
H.DRIVE
V.DRIVE
H.V.CORRECTION
P412B 7P(B-B)
ABL
(HD)
+32V
OFF MUTE
Q604 2SA1015Y
R870 2R18K
R668 P10K
TO SIGNAL BORAD

TP84
DC0
-25V
1V
L421 AT4043/100T
C421 T0.47(200V)
C484 T0.75(200V)
L441 TLN21370
RD08 P110K
RD09 P15K
R442 1R1K
L412 TLN3191D
C485 T0.75(200V)
C444 S100(1800VH)
C486 T0.33(200V)
R448 2FR150
C423 T0.47(200V)
C422 0.047(400V)
L422 TLN3083
L492 TLN3081
L414 TEH2011
C448 0.01(630V)
CD11 3.3μ(100V)
DD02 ERC20-08
DD03 BYD33J
RD92 2K2.2
(-27V)
RD95 1/2K3.3K
RD07 P27K
RD10 P15K
DD04 1N4148
DD05 UZ12BSA
DD07 UZ5.6BSB
DD06 UZ5.6BSB
RD06 1/2R1.8K
RD03 P5.6K
RD04 P2.4K
+27V
-24
-14
-13.3
-0.6
0
QD01 2SB688
QD02 2SC1815N-Y
QD03 2SC1815N-Y
C316 M0.47
0.5
8.7
R218 P4.7K
R255 20K(B)
SUB BRIGHT
H. CENT USER
R452 5KCC
C412 M0.0018
C819 47p
C849 470(50V)
D830 RU4Z LF-L1
L821 TLN2026
C829 2200μ(35V) Audio Vcc 25" 26.5V 21" 25.5V Audio Out 10% Down
C840 470(50V)
L842 TEH2011
L860 TLN2026
C827 470μ(16V)
L823 TRF9253D
C830 220R(12KV)
C831 220μ(160V)
L826 TLN3155D
F803 T800mA L/250V
125V
129.0
D844 UZ12BSA
115.0
D811 1N4148
D828 1N4123
25.6
R820 P100
C833 10μ
Q827 S1854FA ERROR AMP.
D848 UZ4.7BSB
IC835 L78MR05FA
28.7 3.9 5.0 5.0
C837 10μ
C835 4.7μ
C836 10μ
R863 P1K
R848 1/2R3.3K
R884 1/2FR12
R893 P10K
R825 P4.7K
Q836 2SA1015Y
4.3
5.0
0.7
R868 P470
D814 1N4148
0.2
R819 P4.7K
Q871 2SC1815N-Y
D812 1N4148
R878 1/2FR56
Q870 2SC2655Y
28.5
10.1
D875 1N4148
R879 P4.7K
10.7
D874 UZ5.1BSC
D876 UZ5.6BSA
(+5V-1)
0.1
Q831 2SC1815Y
0.7
R867 P10K
R868 P4.7K
D471 3FOR3042 (GSH1) (233184541)
R474 P330
D474 UZ16BSB
D475 UZ12BSB
R475 P1K
C471 M0.47
C470 22μ(16V)
R477 P15K
R472 1/2F39K
125.4
125
Q470 2SA1320
R479 1R0.56
R471 P100
(+120V)21"
(+125V)25"
TP91
Q604 2SA1015Y
R868 P10K
13.9
D601 1N4148
R874 P1K
13.8V
C828 47μ
R870 2R18K
Q861 2SC3852
PRF1000F008
8.5
5.2
5.8
R860 P680
D861 UZ5.6BSC
C820 47μ(16V)
D816 UZ6.2BSA
L862 PL-2.2
R868 P10K
13.9
D601 1N4148
R874 P1K
13.8V
C828 47μ
R870 2R18K
3L9
T481 TFB4117AR
R920 2FR1.5 (V/C CRT)
3L3
C441 220(500V)
D408 BYD33J
(180V)
C447 4.7μ(250V)
P511A 4P (2.5mm)
H511
(P511A)
DC0
2.2Vp-p(H)
MUTE
L
R
SUB BRIGHT
AFC
P4138 8P(B-B)
(VD)
25"IK1 SDA
GND
28"IK1 SCL
H.DRIVE
V.DRIVE
H.V.CORRECTION
P4128 7P(B-B)
ABL
(HD)
+32V
OFF MUTE
GND
+12V
+5V-2
P4118 7P(B-B)
+5V-1
H.Vcc
GND
POWER
RESET
IR-IN
P4108 7P(B-B)
TO SIGNAL BORAD
34
TO DSM
RA90 P390
DE50 SCL003URCFX LED POWER IND.
K901 IR-9109A-K
25"]

SPECIFICATIONS

Input Power Rating:	105 W (2836DF), 88 W (2536DF), AC 220 ~ 240 V, 50 Hz
Aerial Input Impedance:	75 ohm unbalanced type for VHF, UHF and CATV
Receiving Channels:	**SECAM L Standard:** VHF ..... channels B to C, 1 to 6, B to Q, 71 to 86 UHF ..... channels 21 to 69 **PAL B/G Standard, SECAM B/G Standard:** VHF ..... channels 2 to 4, 5 to 12 and S1 to S20, S21 to S41 UHF ..... channels 21 to 69 **PAL I Standard:** UHF ..... channels 21 to 68 **PAL D/K, SECAM D/K Standard:** VHF ..... channels 1 to 12 UHF ..... channels 21 to 69 **PAL, SECAM 50 Hz/60 Hz (For Video Disk playback)** **4.43 NTSC (For VCR playback), 3.58 NTSC (For VCR playback)**
Intermediate Frequencies:	Picture I-F carrier frequency ..... 38.9/34.47 MHz (L VL) Sound I-F carrier frequency L System ..... 32.4 MHz (L VH, U)/40.97 MHz (L VL) B/G System ..... 33.4/33.16 MHz I System ..... 32.9 MHz D/K System ..... 32.4 MHz
Picture Tube:	28 inches, A66ECY13X31, 660 mm (measured on diagonal of viewable picture area) (2836DF), 25 inches, A59ECY13X31, 590 mm (measured on diagonal of viewable picture area) (2536DF), 110° deflection
Sound Output:	10.0 W x 2 (at 10% Distortion)
Speakers:	120 mm x 80 mm oval 2 pcs
Aux. Terminals:	21 pin socket (FULL), 21 pin socket (S-VIDEO/AUDIO), S-VIDEO, VIDEO/AUDIO INPUT socket
Cabinet:	Table type
Dimensions:	(2836DF) (2536DF) Height ..... 569 mm 516 mm Width ..... 700 mm 640 mm Depth ..... 474 mm 447 mm
Mass:	33 kg (2836DF), 27 kg (2536DF)
Features:	Video input of multi system, OFF-timer, Bass boost sound, NICAM DIGITAL STEREO, TELETEXT decorder

Specifications are subject to change without notice.

TOSHIBA CORPORATION
1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-01, JAPAN